

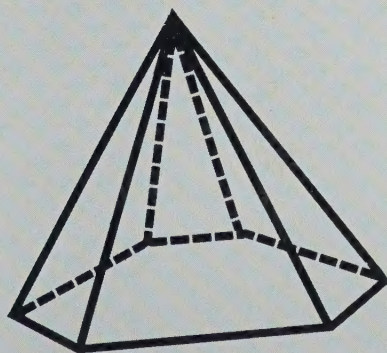
starting points in mathematics

6

Workbook

For each solid shape, give
and the number of faces.

1. hexagonal pyramid



_____ vertices
_____ edges
_____ faces

3. triangular prism



_____ vertices

QA
135.5
S79
1982
gr.6
std.wkbk.
c.3



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Workbook for

**starting points
in mathematics**

Level 6

GINN AND COMPANY
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Numbers to 999 999 999

What does each 3 mean?

1. 1 531 649 3 ten thousands2. 23 146 000

Write in expanded form.

3. 80 902 80 000 + 900 + 2

4. 2 605 000

Write in standard form.

5. nine million 9 095 000
ninety-five thousand

6. 700 000 + 20 000 + 400

What does each 8 mean?

7. 16 820 5948. 81 612 027

Write in expanded form.

9. 800 095

10. 20 067 000

Write in standard form.

11. six million
eight hundred two thousand

12. 4 000 000 + 60 000 + 700

Comparing and Ordering Numbers

Use > or < to make true statements.

1. 498 669 > 496 8962. 6 037 736 ___ 6 073 6373. 908 098 ___ 908 809

List from least to greatest.

4. 47 394, 47 349, 47 397
47 349, 47 394, 47 397

5. 1 298 199, 1 289 289, 1 289 291

Use > or < to make true statements.

6. 46 535 ___ 46 5437. 2 067 538 ___ 2 065 7838. 596 374 ___ 596 3729. 766 969 ___ 766 07010. 17 345 517 ___ 17 354 75111. 1 460 399 ___ 1 604 398

List from least to greatest.

12. 685 686, 684 858, 684 848

13. 4 350 735, 4 350 077, 4 375 037

Rounding

Round	to the nearest thousand	to the nearest ten thousand	to the nearest hundred thousand	to the nearest million
1. 1 266 721	<u>1 267 000</u>	<u>1 270 000</u>	<u>1 300 000</u>	<u>1 000 000</u>
2. 3 464 390	<u>3 46</u>	<u>34</u>	<u>3</u>	
3. 8 717 180				
4. 579 163				
5. 1 298 115				
6. 3 504 500				
7. 4 819 771				
8. 5 676 300				
9. 9 237 462				

SPM6/U1/12-13

Decimals

Write the decimal.

1. one and
three-hundredths 1.032. twenty-five
thousandths 0.3. one hundred and
five-tenths

What does each 6 mean?

4. 8.601 6 tenths5. 4.0366. 0.161

Write the words.

7. 0.408 four hundred eight-thousandths

8. 300.7

Write the decimal.

9. twelve-hundredths

10. four hundred and
seventy-five
thousandths11. four hundred
seventy-five
thousandths

What does each 3 mean?

12. 1.06313. 10.6314. 106.3

Write the words.

15. 7.04

16. 7.040

Practice

What does each 5 mean?

1. 163.058

2. 9 853 372

3. 83.125

4. 960.5

5. 75 404

6. 5 700 472

Write the numeral.

7. four hundred thousand three hundred seventy-eight

8. two hundred and twenty-eight hundredths

9. four and seventy-five thousandths

10. five million six hundred fifty thousand four

11. thirty-seven thousand thirty-seven

12. three and six-hundredths

Write the words.

13. 300.8

14. 2 008 060

15. 70 502

16. 2.004

17. 5.20

18. 406 046

Use $>$, $<$, or $=$ to make true statements.

19. 23 323 ____ 23 330

20. 575 577 ____ 577 075

21. 2 181 181 ____ 2 118 188

22. 648 468 ____ 648 468

23. 90 839 089 ____ 90 830 989

24. 4 213 234 ____ 4 213 240

Write in expanded form.

25. 50 380

26. 602 000

27. 730 040

28. 8 091 020

List from least to greatest.

List from greatest to least.

29. 858 678, 856 778, 856 787

30. 3 454 054, 3 445 045, 3 454 405

Round to the

31. nearest ten thousand.

32. nearest hundred thousand.

33. nearest million.

275 000

1 348 772

29 502 834

Addition Basic Facts Practice

Add.

1. $\begin{array}{r} 5 \\ 2 \\ \hline \end{array}$	2. $\begin{array}{r} 2 \\ 4 \\ \hline \end{array}$	3. $\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$	4. $\begin{array}{r} 3 \\ 6 \\ \hline \end{array}$	5. $\begin{array}{r} 6 \\ 1 \\ \hline \end{array}$	6. $\begin{array}{r} 1 \\ 2 \\ \hline \end{array}$	7. $\begin{array}{r} 2 \\ 7 \\ \hline \end{array}$	8. $\begin{array}{r} 7 \\ 0 \\ \hline \end{array}$
9. $\begin{array}{r} 0 \\ 5 \\ \hline \end{array}$	10. $\begin{array}{r} 5 \\ 6 \\ \hline \end{array}$	11. $\begin{array}{r} 6 \\ 4 \\ \hline \end{array}$	12. $\begin{array}{r} 4 \\ 8 \\ \hline \end{array}$	13. $\begin{array}{r} 8 \\ 5 \\ \hline \end{array}$	14. $\begin{array}{r} 5 \\ 7 \\ \hline \end{array}$	15. $\begin{array}{r} 7 \\ 3 \\ \hline \end{array}$	16. $\begin{array}{r} 3 \\ 8 \\ \hline \end{array}$
17. $\begin{array}{r} 8 \\ 6 \\ \hline \end{array}$	18. $\begin{array}{r} 6 \\ 7 \\ \hline \end{array}$	19. $\begin{array}{r} 7 \\ 7 \\ \hline \end{array}$	20. $\begin{array}{r} 7 \\ 9 \\ \hline \end{array}$	21. $\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$	22. $\begin{array}{r} 4 \\ 7 \\ \hline \end{array}$	23. $\begin{array}{r} 7 \\ 5 \\ \hline \end{array}$	24. $\begin{array}{r} 5 \\ 9 \\ \hline \end{array}$
25. $\begin{array}{r} 9 \\ 9 \\ \hline \end{array}$	26. $\begin{array}{r} 9 \\ 6 \\ \hline \end{array}$	27. $\begin{array}{r} 6 \\ 8 \\ \hline \end{array}$	28. $\begin{array}{r} 8 \\ 7 \\ \hline \end{array}$	29. $\begin{array}{r} 7 \\ 4 \\ \hline \end{array}$	30. $\begin{array}{r} 4 \\ 9 \\ \hline \end{array}$	31. $\begin{array}{r} 9 \\ 8 \\ \hline \end{array}$	32. $\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$

SPM6/U2/16-17

Using Sums of 10

Add. Use sums of 10.

<p>1. $\begin{array}{r} 1 \\ 4 \\ 6 \\ 9 \\ 8 \\ \hline \end{array}$ </p> <p>2. $\begin{array}{r} 2 \\ 7 \\ 3 \\ 8 \\ 4 \\ \hline \end{array}$ </p>	<p>3. $\begin{array}{r} 6 \\ 1 \\ 9 \\ 2 \\ 8 \\ \hline \end{array}$</p> <p>4. $\begin{array}{r} 8 \\ 3 \\ 1 \\ 7 \\ 2 \\ \hline \end{array}$</p> <p>5. $\begin{array}{r} 5 \\ 2 \\ 4 \\ 5 \\ 8 \\ \hline \end{array}$</p>
---	---

6. $\begin{array}{r} 2 \\ 6 \\ 4 \\ \hline \end{array}$	7. $\begin{array}{r} 2 \\ 4 \\ 8 \\ 2 \\ \hline \end{array}$	8. $\begin{array}{r} 1 \\ 4 \\ 9 \\ 6 \\ 8 \\ \hline \end{array}$	9. $\begin{array}{r} 9 \\ 6 \\ 7 \\ 4 \\ 3 \\ \hline \end{array}$	10. $\begin{array}{r} 3 \\ 6 \\ 5 \\ 7 \\ 5 \\ \hline \end{array}$
---	--	---	---	--

11. $8 + 3 + 1 + 7 + 2$

12. $4 + 7 + 1 + 6 + 9$

13. $1 + 3 + 6 + 2 + 9 + 5 + 1 + 8 + 4 + 7$

14. $5 + 1 + 4 + 2 + 4 + 1 + 0 + 3 + 9$

Adding Two Numbers

First round and add to estimate each sum.
Then find the exact sum.

<p>1. $\begin{array}{r} 12\,678 \rightarrow 13\,000 \\ 15\,461 \rightarrow 15\,000 \\ \hline 28\,139 \quad 28\,000 \end{array}$</p> <p>Estimate first.</p> <p>Then add.</p>	<p>2. $\begin{array}{r} 31\,269 \rightarrow 31\,000 \\ 7\,813 \rightarrow \end{array}$</p> <p>Estimate first.</p> <p>Then add.</p>	<p>3. $\begin{array}{r} 2950 \\ 4659 \\ \hline \end{array}$</p>
--	---	--

4. $\begin{array}{r} 825\,439 \\ 28\,394 \\ \hline \end{array}$

5. $\begin{array}{r} 63\,456 \\ 27\,568 \\ \hline \end{array}$

6. $\begin{array}{r} \$261.33 \\ 166.65 \\ \hline \end{array}$

7. $\begin{array}{r} 6473 \\ 7434 \\ \hline \end{array}$

8. $\begin{array}{r} 76\,432 \\ 59\,183 \\ \hline \end{array}$

9. $\begin{array}{r} 47\,989 \\ 70\,732 \\ \hline \end{array}$

SPM6/U2/20-21

Adding More Than Two Numbers

Add.

<p>1. $\begin{array}{r} 513 \\ 734 \\ 396 \\ 217 \\ \hline 1860 \end{array}$</p>	<p>2. $\begin{array}{r} 145 \\ 39 \\ 871 \\ \hline 5 \end{array}$</p>	<p>3. $\begin{array}{r} 3971 \\ 2264 \\ 4545 \\ 6882 \\ \hline \end{array}$</p>	<p>4. $\begin{array}{r} \\$216.63 \\ 0.45 \\ 18.29 \\ \hline 970.23 \end{array}$</p>
---	--	--	---

5. $\begin{array}{r} 1571 \\ 8824 \\ 3675 \\ \hline \end{array}$

6. $\begin{array}{r} 1439 \\ 8021 \\ 5384 \\ \hline 5152 \end{array}$

7. $\begin{array}{r} \$3048 \\ 9656 \\ 2742 \\ \hline 5312 \end{array}$

8. $\begin{array}{r} 42\,269 \\ 54\,361 \\ 25\,372 \\ \hline 3\,156 \end{array}$

9. $\begin{array}{r} 13\,092 \\ 49\,011 \\ 24\,570 \\ 69\,408 \\ 30\,451 \\ \hline \end{array}$

10. $\begin{array}{r} 65\,403 \\ 521 \\ 21\,646 \\ 42\,318 \\ \hline 3\,583 \end{array}$

11. $\begin{array}{r} 26\,958 \\ 43\,452 \\ 1\,638 \\ 21\,055 \\ \hline 627 \end{array}$

12. $\begin{array}{r} \$252.95 \\ 201.48 \\ 657.32 \\ 909.47 \\ \hline 286.11 \end{array}$

Practice

Add.

$$\begin{array}{r} 1. \ 7 \\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \ 2 \\ 5 \\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \ \$1.64 \\ \underline{0.71} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \ 2941 \\ 296 \\ \underline{38} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \ 17\ 013 \\ 1\ 412 \\ \underline{3\ 050} \\ \hline \end{array}$$

$$\begin{array}{r} 6. \ 174 \\ 436 \\ \underline{653} \\ \hline \end{array}$$

$$\begin{array}{r} 7. \ 27\ 061 \\ \underline{41\ 593} \\ \hline \end{array}$$

$$\begin{array}{r} 8. \ 2\ 806\ 129 \\ 1\ 005\ 734 \\ \underline{441\ 039} \\ \hline \end{array}$$

$$\begin{array}{r} 9. \ \$420.68 \\ \underline{157.39} \\ \hline \end{array}$$

$$\begin{array}{r} 10. \ 47 \\ 67 \\ \underline{33} \\ \hline \end{array}$$

11. $25 + 75 + 35$

12. $86 + 109 + 24$

13. $\$47.36 + \52.28

14. $\$975 + \$6237 + \$8550$

15. $279 + 141 + 835$

Solve. Show your work.

16. Marguerite paid \$4.75 for perfume and \$9.36 for cosmetics. How much did she pay in all?

17. Seven adult tickets cost \$19.25. Five children's tickets cost \$7.50. What is the total ticket cost?

18. In 1976, 3858 t of lobster were caught off Prince Edward Island. 5904 t were caught off Nova Scotia. How many tonnes were caught in all?

19. In Newfoundland there were 119 565 t of cod caught and 249 t of haddock caught in 1976. What was the total catch of these two kinds of fish?

20. In three provinces the numbers of hay balers in use in 1960 were 30 860, 31 093, and 4 927. What was the total number of balers in use?

21. For this week, Peter's regular pay is \$274.83. His overtime pay is \$36.77. His bonus is \$25.00. What is his total pay?

NAME _____

Subtraction Basic Facts Practice

Subtract.

$$\begin{array}{r} 1. \ 5 \\ \underline{2} \end{array}$$

$$\begin{array}{r} 2. \ 4 \\ \underline{3} \end{array}$$

$$\begin{array}{r} 3. \ 5 \\ \underline{1} \end{array}$$

$$\begin{array}{r} 4. \ 9 \\ \underline{4} \end{array}$$

$$\begin{array}{r} 5. \ 8 \\ \underline{5} \end{array}$$

$$\begin{array}{r} 6. \ 6 \\ \underline{3} \end{array}$$

$$\begin{array}{r} 7. \ 7 \\ \underline{3} \end{array}$$

$$\begin{array}{r} 8. \ 10 \\ \underline{4} \end{array}$$

$$\begin{array}{r} 9. \ 11 \\ \underline{6} \end{array}$$

$$\begin{array}{r} 10. \ 12 \\ \underline{5} \end{array}$$

$$\begin{array}{r} 11. \ 10 \\ \underline{7} \end{array}$$

$$\begin{array}{r} 12. \ 11 \\ \underline{3} \end{array}$$

$$\begin{array}{r} 13. \ 12 \\ \underline{8} \end{array}$$

$$\begin{array}{r} 14. \ 11 \\ \underline{4} \end{array}$$

$$\begin{array}{r} 15. \ 13 \\ \underline{7} \end{array}$$

$$\begin{array}{r} 16. \ 14 \\ \underline{6} \end{array}$$

$$\begin{array}{r} 17. \ 13 \\ \underline{8} \end{array}$$

$$\begin{array}{r} 18. \ 14 \\ \underline{5} \end{array}$$

$$\begin{array}{r} 19. \ 13 \\ \underline{9} \end{array}$$

$$\begin{array}{r} 20. \ 12 \\ \underline{4} \end{array}$$

$$\begin{array}{r} 21. \ 15 \\ \underline{8} \end{array}$$

$$\begin{array}{r} 22. \ 16 \\ \underline{7} \end{array}$$

$$\begin{array}{r} 23. \ 14 \\ \underline{9} \end{array}$$

$$\begin{array}{r} 24. \ 13 \\ \underline{5} \end{array}$$

$$\begin{array}{r} 25. \ 17 \\ \underline{8} \end{array}$$

$$\begin{array}{r} 26. \ 16 \\ \underline{9} \end{array}$$

$$\begin{array}{r} 27. \ 12 \\ \underline{7} \end{array}$$

$$\begin{array}{r} 28. \ 10 \\ \underline{5} \end{array}$$

SPM6/U2/24-25

Subtraction With No Regrouping

Subtract.

$$\begin{array}{r} 1. \ 489 \\ \underline{365} \\ 124 \end{array}$$

$$\begin{array}{r} 2. \ 8247 \\ \underline{4140} \\ 7 \end{array}$$

$$\begin{array}{r} 3. \ 95796 \\ \underline{90245} \end{array}$$

$$4. \ \$579.29 - \$168.08$$

$$\begin{array}{r} 5. \ 89 \\ \underline{30} \end{array}$$

$$\begin{array}{r} 6. \ 835 \\ \underline{324} \end{array}$$

$$\begin{array}{r} 7. \ 5865 \\ \underline{4653} \end{array}$$

$$\begin{array}{r} 8. \ 33894 \\ \underline{3731} \end{array}$$

$$\begin{array}{r} 9. \ 69577 \\ \underline{26201} \end{array}$$

$$\begin{array}{r} 10. \ 7245 \\ \underline{6225} \end{array}$$

$$\begin{array}{r} 11. \ \$56786 \\ \underline{24365} \end{array}$$

$$\begin{array}{r} 12. \ 8696 \\ \underline{5321} \end{array}$$

$$\begin{array}{r} 13. \ 79859 \\ \underline{31218} \end{array}$$

$$\begin{array}{r} 14. \ \$695.32 \\ \underline{503.12} \end{array}$$

$$15. \ 94635 - 73623$$

$$16. \ 27179 - 1504$$

$$17. \ \$962.64 - \$202.50$$

Subtraction With Regrouping

Round and subtract to estimate each difference.
Then find the exact difference.

$\begin{array}{r} \overset{17}{4} \overset{15}{7} \overset{13}{8} \overset{13}{8} 7 \rightarrow 60\ 000 \\ \underline{19\ 863} \rightarrow 20\ 000 \\ 38\ 774 \quad 40\ 000 \end{array}$ <p>Estimate first.</p> <p>Then subtract.</p>	$\begin{array}{r} 2. \quad 39\ 461 \rightarrow 40\ 000 \\ \underline{26\ 837} \rightarrow \end{array}$ <p>Estimate first.</p> <p>Then subtract.</p>	$\begin{array}{r} 3. \quad \$827.64 \\ \underline{486.78} \end{array}$
---	---	--

$$\begin{array}{r} 4. \quad 4719 \\ \underline{2364} \end{array}$$

$$\begin{array}{r} 5. \quad 62\ 760 \\ \underline{27\ 135} \end{array}$$

$$\begin{array}{r} 6. \quad 76\ 721 \\ \underline{19\ 543} \end{array}$$

$$\begin{array}{r} 7. \quad \$16\ 515 \\ \underline{7\ 086} \end{array}$$

$$\begin{array}{r} 8. \quad 61\ 450 \\ \underline{13\ 636} \end{array}$$

$$\begin{array}{r} 9. \quad 78\ 363 \\ \underline{8\ 382} \end{array}$$

$$\begin{array}{r} 10. \quad \$913.73 \\ \underline{598.45} \end{array}$$

$$\begin{array}{r} 11. \quad 96\ 310 \\ \underline{79\ 542} \end{array}$$

$$\begin{array}{r} 12. \quad \$355.32 \\ \underline{275.69} \end{array}$$

SPM6/U2/28-29

Subtraction, Regrouping with Zeros

Subtract.

$\begin{array}{r} 1. \quad \overset{19}{20} \overset{99}{00} \overset{10}{00} \\ \underline{17\ 365} \\ 2\ 635 \end{array}$	$\begin{array}{r} 2. \quad \overset{10}{13} \overset{00}{00} \overset{00}{00} \\ \underline{7\ 876} \end{array}$	$\begin{array}{r} 3. \quad 6090 \\ \underline{5431} \end{array}$	$\begin{array}{r} 4. \quad 80\ 606 \\ \underline{78\ 695} \end{array}$
---	--	--	--

$$\begin{array}{r} 5. \quad 800 \\ \underline{436} \end{array}$$

$$\begin{array}{r} 6. \quad 110\ 090 \\ \underline{76\ 297} \end{array}$$

$$\begin{array}{r} 7. \quad 3080 \\ \underline{2431} \end{array}$$

$$\begin{array}{r} 8. \quad 5000 \\ \underline{4281} \end{array}$$

$$\begin{array}{r} 9. \quad \$780.78 \\ \underline{273.97} \end{array}$$

$$\begin{array}{r} 10. \quad 70\ 050 \\ \underline{43\ 465} \end{array}$$

$$\begin{array}{r} 11. \quad 86\ 008 \\ \underline{46\ 857} \end{array}$$

$$\begin{array}{r} 12. \quad \$110.00 \\ \underline{34.57} \end{array}$$

$$13. \quad \$700.00 - \$325.74 \quad 14. \quad \$80\ 308 - \$57\ 561 \quad 15. \quad 700\ 090 - 457\ 831$$

Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \quad 7 \\ 2 \\ 3 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 49\,417 \\ - 7\,265 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 4276 \\ 6853 \\ + 134 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \$45.77 \\ - 21.95 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 40\,301 \\ - 16\,517 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 2731 \\ 4106 \\ 273 \\ + 1915 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad \$6371 \\ + 4287 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 46\,030 \\ - 19\,275 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 271\,000 \\ 826\,000 \\ + 914\,000 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 15 \\ 94 \\ 26 \\ 85 \\ + 17 \\ \hline \end{array}$$

$$11. \$6.38 + \$3.72 + \$4.19$$

$$12. \$36.85 + \$4.73 + \$9.16$$

$$13. 868\,217 - 142\,976$$

$$14. 27\,003 - 4\,918$$

Solve. Show your work.

15. During 1976, the fishing industry caught 96 286 t of herring off Nova Scotia and 75 296 t off New Brunswick. How much was the total catch?

16. Matt's mother is looking at two used cars. One costs \$2795. The other costs \$4000. How much more expensive is the second one?

17. Canaries in the pet store cost \$11.25. Budgies cost \$18.95. What would one of each cost in all?

18. In 1966 Manitoba had 39 747 farms. In 1976 there were only 29 963 farms. How many fewer farms were there in 1976?

19. In 1976 the numbers of farms in Manitoba, Saskatchewan, and Alberta were 29 963, 69 578, and 57 310, respectively. How many farms were there in all three provinces?

20. The distance from Kamloops to Vancouver is 425 km. From Prince Rupert to Vancouver it is 1522 km. How much further away from Vancouver is Prince Rupert?

Organizing Information

These are the scores on a spelling test given to a group of students.

This tally chart shows that 8 students scored 80 or better.

90 80 50 70 80 80 70 80
70 60 60 70 70 100 60 50 60
60 90 80 70 80 70 60 70

← first row tallied

Score	Tally	Number
80-100		
50-70		

- Complete a tally chart to show the number of students who have each score.
- What is the highest score?
- What is the lowest score?
- What score occurs most frequently?
- What score occurs only once?
- How many students were tested?

Score	Tally	Number
100		
90		
80		
70		
60		
50		

SPM6/U3/38-39

Pictographs

Draw a pictograph.

- Show how many games of chess were won by each.

Student Games Won

Sara	18
Jonathon	24
Laszlo	22
Tanya	28

Chess Games Won	
Sara	
Jonathon	_____
Laszlo	_____
Tanya	_____
stands for 4 games won.	

Draw a pictograph.
Use another sheet of paper.

- Show the number of student birthdays each month.

Jan. 8,	Feb. 4,	March 4,
April 6,	May 16,	June 10,
July 10,	Aug. 12,	Sept. 14,
Oct. 18,	Nov. 8,	Dec. 10

- Show the number of dogs washed by each at the Grade 6 Dog Wash.

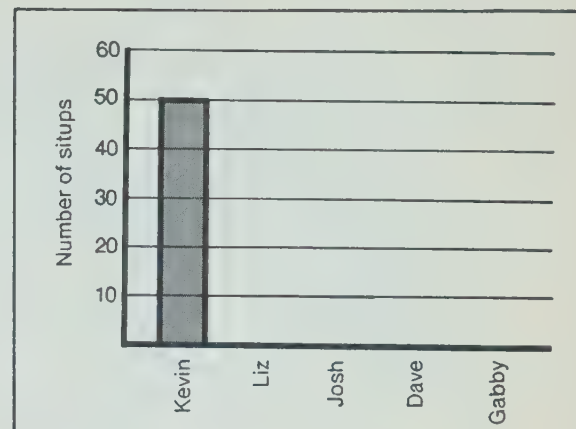
Gwen 6,	Cesaro 8
Rhea 10,	Richard 12
Andrea 8,	Brad 6
Carrie 10,	Aurelia 2

Bar Graphs

Draw a bar graph.

1. Show the number of situps each can do in 1 min.

Name	Number of Situps
Kevin	50
Liz	40
Josh	45
Dave	35
Gabby	40



Draw a bar graph. Use another sheet of paper.

2. Show the number of pushups each can do in 1 min.

Name	Number of Pushups
Kevin	45
Liz	35
Josh	45
Dave	50
Gabby	40

3. Show the number of jumps with a jump rope that each can do in 1 min.

Name	Number of Jumps
Kevin	70
Liz	55
Josh	50
Dave	60
Gabby	65

Practice

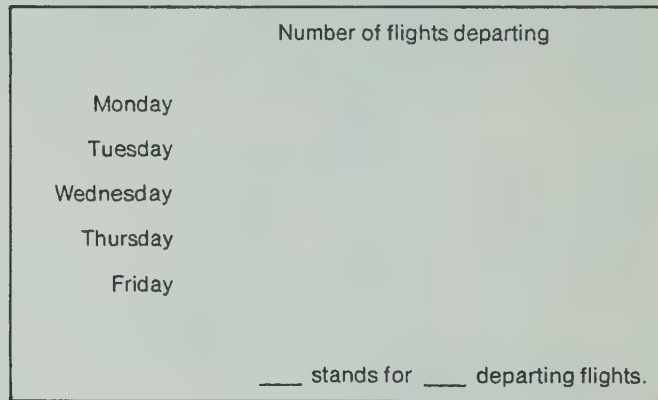
Solve. Show your work.

- There were 165 623 tractors in use in Ontario and 139 487 in Saskatchewan in 1976. How many more were being used in Ontario?
- Mr. Richaud paid \$217.65 for a new table saw. He also bought a drill for \$37.50. What was the total that he spent?
- 37 421 logs were already at the pulp mill. 8 587 more were brought in during the month. How many logs did that make altogether?
- Lucille bought dog food in cans for \$7.27 and a bag of dry dog food for \$12.46. How much more did the dry dog food cost?
- Martha drove 707 km from Victoria to Quesnel, then 533 km from Quesnel to Dawson Creek. Finally, she drove 652 km from Dawson Creek to Williams Lake. How far did she travel in all.
- In 1973 - 1974, there were 25 000 immigrants to Canada from Hong Kong, 30 000 from Portugal, and 50 000 from the U.S.A. What was the total number of these immigrants?

Practice

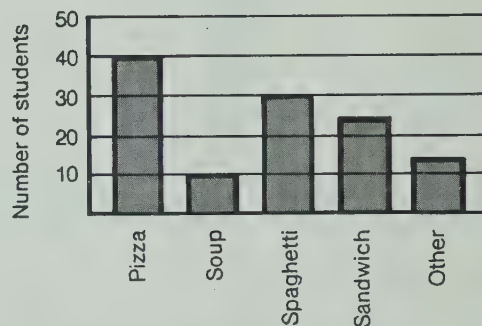
An airport servicing several small towns had several flights departing each day. Draw a pictograph to show the following information.

	Days	Number of Flights Departing
1.	Monday	22
	Tuesday	28
	Wednesday	24
	Thursday	23
	Friday	35



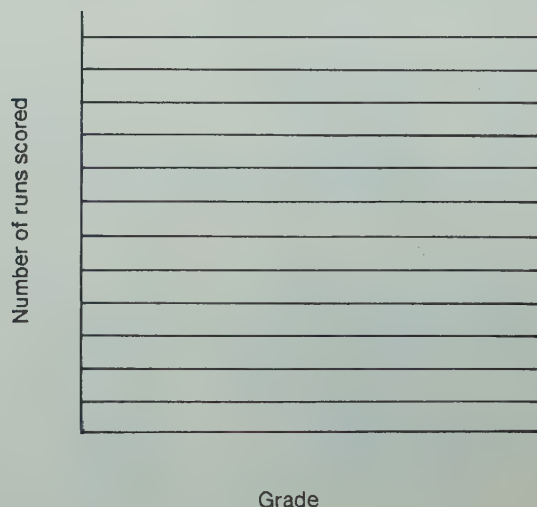
Edward asked the children in Grade 6 to name the kinds of lunches they like best. He drew a bar graph to show their answers.

- Which lunch was the favorite?
- Which lunch was the least favorite?
- How many children liked pizza or spaghetti?
- Which did more children prefer, a sandwich or spaghetti?
- How many children did Edward ask?



The tally sheet shows the number of runs scored in kickball by children in Grades 1-6 for one week. Draw a bar graph to show this information.

	Grade	Runs Scored
7.	1	### ### ### ###
	2	### ### ### ###
	3	### ### ### ###
	4	### ### ### ###
	5	### ### ### ###
	6	### ### ### ###



Ordered Pairs of Numbers and Points on a Grid

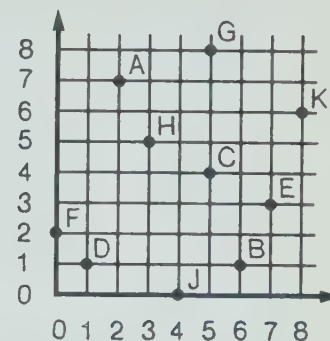
Give the ordered pair that matches.

1. point A <u>(2, 7)</u>	2. point B <u>(6, 1)</u>
3. point C _____	4. point D _____

5. point E _____ 6. point F _____

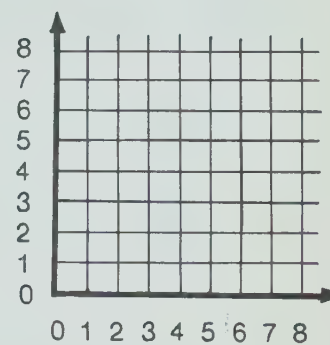
7. point G _____ 8. point H _____

9. point J _____ 10. point K _____



Plot these points on the grid at the right.

- | | |
|--------------|--------------|
| 11. A (5, 4) | 12. B (8, 8) |
| 13. C (1, 3) | 14. D (3, 6) |
| 15. E (2, 2) | 16. F (8, 6) |
| 17. G (8, 1) | 18. H (4, 2) |
| 19. J (0, 5) | 20. K (1, 8) |
| 21. L (6, 5) | 22. M (3, 0) |



Practice

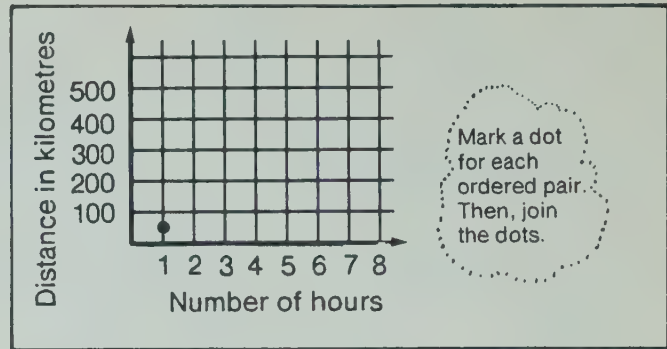
Solve. Show your work.

- Dr. Killian considered two routes for a vacation drive to Montreal. The route through Toronto was 1681 km. The route through Sudbury was 1492 km. How much shorter was the Sudbury route?
- Mrs. McGuigan had a good crop of sweet corn. She raised 421 crates of sweet corn in July, 684 crates in August, and 315 crates in September. What was her total sweet corn crop?
- Three trips were made by the rented car in one week. One was 68 km from Victoria to Vancouver. Another was 288 km from Vancouver to Princeton. The third was 649 km from Princeton to Prince George. Altogether how far did the car travel this week?
- The large shed has $14\,200\text{ m}^3$ (cubic metres) of space. The small one has 9555 m^3 of space. How much more volume does the large shed have?

Line Graphs

Draw a line graph for the information given.

	Number of hours	Distance in kilometres
1.	1	60
	2	120
	4	240
	8	480



Use the graph you drew.

2. What is the distance for 6 h? 3. About how long did it take to go 200 km?

Use another sheet of paper. Draw a line graph. Then use your graph to help you answer the questions.

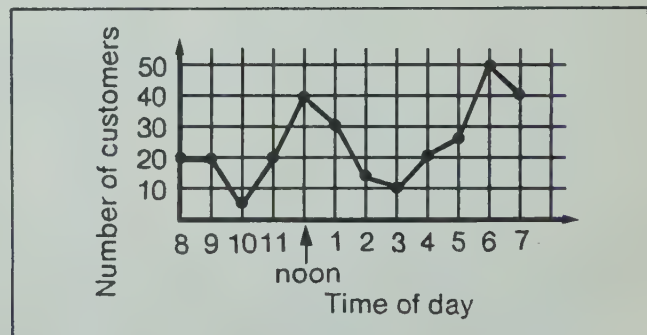
	Number of Apples	Price	
4.	2	25¢	5. About how much would 10 apples cost?
	4	50¢	6. I have 90¢. Is that enough for 7 apples?
	6	75¢	7. How much more must I pay for 12 apples than for 8 apples?
	12	150¢	

SPM6/U3/46-47

Broken-Line Graphs

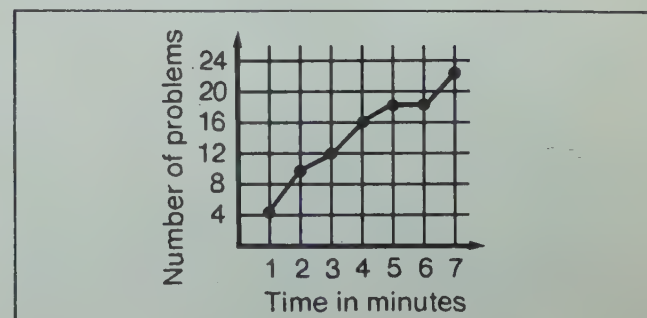
The graph shows the number of customers in the restaurant.

- When were the most customers in the restaurant?
- When were the fewest customers there?
- Were there more customers at 1 p.m. or at 5 p.m.? How many more?
- During which hour did the number of customers increase the most?



The graph shows the number of problems solved by Julia in the Math Bee.

- How many did Julia solve in 5 min?
- How many problems did she solve during the fourth minute?
- During which minute did she solve the fewest problems?
- After 2 min, Julia had solved 9 problems. By when had she doubled that number?



Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \quad 7 \\ 8 \\ 3 \\ + 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 278 \\ - 199 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 27\,481 \\ + 96\,627 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \$48.19 \\ - 21.75 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 273 \\ 419 \\ + 2108 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad \$218.41 \\ - 95.80 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 2813 \\ 4907 \\ + 6628 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 884\,162 \\ 27\,861 \\ + 9\,350 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 27\,020 \\ - 8\,163 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad \$27.00 \\ - 14.68 \\ \hline \end{array}$$

$$11. \quad 42\,381 + 6\,498$$

$$12. \quad 86\,014 - 27\,075$$

$$13. \quad \$570.36 - \$289.18$$

Solve. Show your work.

14. Each boy who came to the party brought some games to be used. Pierre brought 4 games, Jan brought 3, Alf brought 6, and Ian brought 5. Together, how many did they bring?

15. The small airplane would cost the company \$13 900 without all-weather instruments and \$21 336 with the instruments. How much would the extra instruments cost?

16. In 1977 the Canadian mint produced 89 120 791 nickels and 99 634 555 quarters. Together, how many of these two kinds of coins were minted?

17. Mr. Stewart's racing ten-speed bike cost \$225.55. His daughter's ten-speed cost \$110.95. How much more expensive was the father's bike?

18. When Mrs. Wakeman went to shop, she spent \$55.41 on groceries. Her son spent \$7.81 in the drugstore. Together, what did they spend?

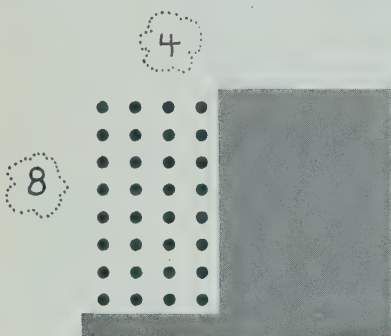
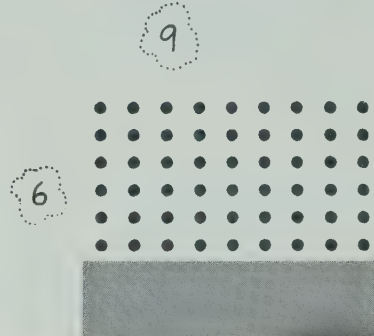
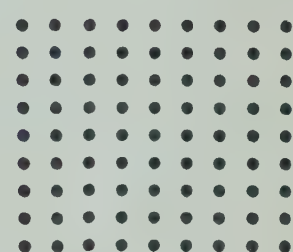
19. When two large universities were asked about the number of students attending, one replied 14 250 and the other said 9 877. What was the total for the two universities?

NAME _____

SPM6/U4/50-51

Basic Multiplication Facts

Multiply.

<p>1. $8 \times 4 = 32$</p> 	<p>2. 6×9</p> 	<p>Cover as needed to help you find the products.</p> 	
3. 2×4	4. 3×3	5. 5×2	6. 4×5

- | | | | |
|------------------|------------------|------------------|------------------|
| 7. 6×3 | 8. 2×8 | 9. 6×5 | 10. 3×7 |
| 11. 9×4 | 12. 5×8 | 13. 6×6 | 14. 4×7 |
| 15. 8×7 | 16. 7×9 | 17. 9×8 | 18. 8×6 |

Multiply. Time yourself for each row.

- | | | | | | | |
|---|---|---|---|---|---|---|
| 19. $\begin{array}{r} 2 \\ 2 \end{array}$ | 20. $\begin{array}{r} 4 \\ 3 \end{array}$ | 21. $\begin{array}{r} 1 \\ 5 \end{array}$ | 22. $\begin{array}{r} 2 \\ 6 \end{array}$ | 23. $\begin{array}{r} 3 \\ 2 \end{array}$ | 24. $\begin{array}{r} 4 \\ 4 \end{array}$ | 25. $\begin{array}{r} 3 \\ 5 \end{array}$ |
| 26. $\begin{array}{r} 7 \\ 2 \end{array}$ | 27. $\begin{array}{r} 4 \\ 6 \end{array}$ | 28. $\begin{array}{r} 8 \\ 3 \end{array}$ | 29. $\begin{array}{r} 5 \\ 5 \end{array}$ | 30. $\begin{array}{r} 7 \\ 5 \end{array}$ | 31. $\begin{array}{r} 4 \\ 8 \end{array}$ | 32. $\begin{array}{r} 9 \\ 3 \end{array}$ |
| 33. $\begin{array}{r} 5 \\ 9 \end{array}$ | 34. $\begin{array}{r} 7 \\ 7 \end{array}$ | 35. $\begin{array}{r} 9 \\ 6 \end{array}$ | 36. $\begin{array}{r} 8 \\ 5 \end{array}$ | 37. $\begin{array}{r} 9 \\ 9 \end{array}$ | 38. $\begin{array}{r} 5 \\ 7 \end{array}$ | 39. $\begin{array}{r} 8 \\ 8 \end{array}$ |
| 40. $\begin{array}{r} 9 \\ 2 \end{array}$ | 41. $\begin{array}{r} 3 \\ 6 \end{array}$ | 42. $\begin{array}{r} 5 \\ 4 \end{array}$ | 43. $\begin{array}{r} 7 \\ 4 \end{array}$ | 44. $\begin{array}{r} 6 \\ 8 \end{array}$ | 45. $\begin{array}{r} 9 \\ 7 \end{array}$ | 46. $\begin{array}{r} 7 \\ 8 \end{array}$ |

Multiplying by a One-Digit Number

Multiply.

1. $\begin{array}{r} 976 \\ \times 4 \\ \hline 3904 \end{array}$	2. $\begin{array}{r} 6059 \\ \times 3 \\ \hline \end{array}$	3. $\begin{array}{r} 5157 \\ \times 5 \\ \hline \end{array}$	4. 9250×6
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5. $\begin{array}{r} 864 \\ \times 7 \\ \hline \end{array}$

6. $\begin{array}{r} 5382 \\ \times 4 \\ \hline \end{array}$

7. $\begin{array}{r} 60138 \\ \times 6 \\ \hline \end{array}$

8. $\begin{array}{r} 4216 \\ \times 9 \\ \hline \end{array}$

9. $\begin{array}{r} 16309 \\ \times 8 \\ \hline \end{array}$

10. $\begin{array}{r} 38609 \\ \times 3 \\ \hline \end{array}$

11. $\begin{array}{r} 59308 \\ \times 2 \\ \hline \end{array}$

12. $\begin{array}{r} 20937 \\ \times 7 \\ \hline \end{array}$

13. $\begin{array}{r} 7604 \\ \times 6 \\ \hline \end{array}$

14. $\begin{array}{r} 4209 \\ \times 5 \\ \hline \end{array}$

15. 179×9

16. 7×8095

17. 4852×8

Multiplying by Multiples of 10, 100, and 1000

Multiply.

1. $\begin{array}{r} 27 \\ \times 30 \\ \hline 810 \\ \text{3} \times 27 \end{array}$	2. $\begin{array}{r} 286 \\ \times 200 \\ \hline 57200 \\ \text{2} \times 286 \end{array}$	3. $\begin{array}{r} 358 \\ \times 500 \\ \hline \end{array}$	4. 421×7000
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5. $\begin{array}{r} 146 \\ \times 400 \\ \hline \end{array}$

6. $\begin{array}{r} 963 \\ \times 90 \\ \hline \end{array}$

7. $\begin{array}{r} 675 \\ \times 2000 \\ \hline \end{array}$

8. $\begin{array}{r} 307 \\ \times 800 \\ \hline \end{array}$

9. $\begin{array}{r} 468 \\ \times 1000 \\ \hline \end{array}$

10. $\begin{array}{r} 35 \\ \times 3000 \\ \hline \end{array}$

11. $\begin{array}{r} 573 \\ \times 70 \\ \hline \end{array}$

12. $\begin{array}{r} 496 \\ \times 600 \\ \hline \end{array}$

13. $\begin{array}{r} 803 \\ \times 1000 \\ \hline \end{array}$

14. $\begin{array}{r} 380 \\ \times 400 \\ \hline \end{array}$

15. 357×8000

16. 418×300

17. 649×50

Multiplying by a Two-Digit Number

Multiply.

1. $\begin{array}{r} 536 \\ 23 \\ \hline 1608 \\ 10720 \\ \hline 12328 \end{array}$ <div> $\leftarrow 3 \times 536$ $\leftarrow 20 \times 536$ </div>	2. $\begin{array}{r} 421 \\ 46 \\ \hline \end{array}$ <div> $\leftarrow 6 \times 421$ $\leftarrow 40 \times 421$ </div>	3. $\begin{array}{r} 83 \\ 47 \\ \hline \end{array}$	4. 28×704
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5.
$$\begin{array}{r} 73 \\ 64 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 247 \\ 75 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 628 \\ 27 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 985 \\ 82 \\ \hline \end{array}$$

9.
$$\begin{array}{r} \$6983 \\ 56 \\ \hline \end{array}$$

10. 14×8694

11. 99×7053

12. $53 \times \$4605$

Multiplying by a Three-Digit Number

Multiply.

1. $\begin{array}{r} 715 \\ 503 \\ \hline 2145 \\ 357500 \\ \hline 359645 \end{array}$ <div> $\leftarrow 3 \times 715$ $\leftarrow 500 \times 715$ </div>	2. $\begin{array}{r} 617 \\ 432 \\ \hline \end{array}$ <div> $\leftarrow 2 \times 617$ $\leftarrow 30 \times 617$ $\leftarrow 400 \times 617$ </div>	3. $\begin{array}{r} \$523 \\ 980 \\ \hline \end{array}$	4. 356×807
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5.
$$\begin{array}{r} 204 \\ 521 \\ \hline \end{array}$$

6.
$$\begin{array}{r} \$278 \\ 813 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 469 \\ 530 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 168 \\ 849 \\ \hline \end{array}$$

9.
$$\begin{array}{r} \$947 \\ 672 \\ \hline \end{array}$$

10. 487×685

11. $360 \times \$867$

12. 395×706

Practice

Perform the indicated operation.

1.
$$\begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$$

2.
$$\begin{array}{r} \$83.21 \\ + 19.46 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 207 \\ - 188 \\ \hline \end{array}$$

4.
$$\begin{array}{r} \$243 \\ \times 5 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 15\,281 \\ 4\,968 \\ + 32\,071 \\ \hline \end{array}$$

6.
$$\begin{array}{r} \$79.08 \\ - 15.29 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 46 \\ \times 60 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 284 \\ 76 \\ 3194 \\ + 647 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 9 \\ \times 6 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 128 \\ \times 274 \\ \hline \end{array}$$

11. $\$43.16 - \27.85

12. 482×36

13. $842 + 3104 + 867$

Solve. Show your work.

14. On his paper route, Sidney delivers to 27 customers each day. How many papers will he deliver during the 28 d of February?

15. The cost of repairs from the storm came to \$117 500. Insurance paid \$95 875. How much remained to be paid?

16. At the candy factory Mrs. Tonka's job is to put 25 mints in each box and 36 boxes in each carton. How many mints will there be in each carton?

17. The truck on its deliveries covered 585 km this week, 789 last week, and is expected to drive 650 km next week. What will the total distance be?

18. The boys all brought out their butterfly collections. Jon had 37 butterflies. Manny had 41. Brook had 26. What was the total number of butterflies in their collections?

19. Millie owed her mother \$42 for clothing. This week she paid her \$7. Last week she paid \$4.50. How much does she still owe?

Using Multiplication to Divide

Divide. Write the remainder beside the quotient when the remainder is not 0.

$\begin{array}{r} 6R2 \\ 8 \overline{)50} \\ \underline{48} \\ 2 \end{array}$	$\begin{array}{r} 8 \\ 9 \overline{)76} \end{array}$	$3. \ 4 \overline{)35}$	$4. \ 36 \div 5$
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5. $3 \overline{)29}$

6. $7 \overline{)38}$

7. $9 \overline{)42}$

8. $4 \overline{)24}$

9. $6 \overline{)55}$

10. $5 \overline{)24}$

11. $8 \overline{)56}$

12. $7 \overline{)34}$

13. $6 \overline{)48}$

14. $3 \overline{)26}$

15. $66 \div 8$

16. $63 \div 7$

17. $40 \div 6$

18. $35 \div 9$

Practice

Solve. Show your work.

- Jenny arranged the 28 medals in 4 equal rows. How many medals were in each row?
- The book has 872 pages. Warren has read 395 already. How many pages remain?
- The school buys pencils in large quantities. There are 144 pencils in a box and the principal ordered 12 boxes. How many pencils would this be?
- Scientists estimated the spacecraft would travel 21 554 km during the first hour of its journey and 28 175 km during the second. What would be the total distance covered for the first two hours?
- Stuart earned \$275 each week for 44 weeks this year. How much did he earn?
- Sian paid \$143.79 for her ticket. She was able to get a \$15.00 refund on an unused part. How much did the ticket cost her?

Dividing by a One-Digit Number

Divide.

$\begin{array}{r} 89 \\ 6 \overline{)534} \\ \underline{48} \\ 54 \\ \underline{54} \\ 0 \end{array}$	$\begin{array}{r} 9 \\ 7 \overline{)645} \\ \underline{63} \end{array}$	$3. 5 \overline{)3210}$	$4. 543 \div 7$
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5. $4 \overline{)298}$

6. $8 \overline{)231}$

7. $2 \overline{)7310}$

8. $9 \overline{)1030}$

9. $3 \overline{)\$2226}$

10. $1029 \div 3$

11. $6911 \div 5$

12. $\$77\,882 \div 7$

Zeros in the Quotient

Divide.

$\begin{array}{r} 803 \text{ R}2 \\ 4 \overline{)3214} \\ \underline{32} \\ 014 \\ \underline{12} \\ 2 \end{array}$	$\begin{array}{r} 9 \\ 6 \overline{)5432} \\ \underline{54} \end{array}$	$3. 5 \overline{)3521}$	$4. 64\,407 \div 7$
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5. $2 \overline{)4118}$

6. $5 \overline{)7048}$

7. $8 \overline{)7264}$

8. $3 \overline{)30\,012}$

9. $4963 \div 7$

10. $62\,042 \div 6$

11. $8043 \div 4$

Finding the Average

Find the average. Show your work on another sheet of paper.

1. On the weekdays Julie ran 8, 3, 5, 7, and 7 km. What was the average distance run each day?

$$\begin{array}{r} 6 \text{ km} \\ 5 \overline{)30} \end{array}$$

$$8+3+5+7+7=30$$

2. By innings, the Jay's scored 3, 0, 5, 4, 3, 6, 3, 1, and 2 runs. What was the average number of runs scored each inning?

3. 9, 8, 5, and 6 h

4. 2901, 2891, and 2899 kg

5. 21, 28, 15, 30, 32, and 18 min

6. 284, 296, 302, 190, 290, 350, 270, and 218 d

7. 1700, 1650, 1740, and 1734 cars

8. \$4567, \$5467, \$3456, \$4563, and \$5037

9. 300, 400, 200, 410, 220, 330, 305, and 283 points

10. 59, 82, 87, 64, 77, 71, 68, 84, and 110 people

SPM6/U4/68-69

Dividing by Multiples of 10

Divide.

$$\begin{array}{r} 47 \text{ R}10 \\ 40 \overline{)1890} \\ \underline{160} \\ 290 \\ \underline{280} \\ 10 \end{array}$$

$$(40 \times 4)$$

$$(40 \times 7)$$

$$\begin{array}{r} 4 \\ 60 \overline{)2520} \\ \underline{240} \end{array}$$

$$(60 \times 4)$$

$$3. 90 \overline{)2100}$$

$$4. 30 \overline{)2589}$$

$$5. 80 \overline{)1987}$$

$$6. 30 \overline{)3960}$$

$$7. 50 \overline{)23189}$$

$$8. 70 \overline{)45630}$$

$$9. 60 \overline{)28455}$$

$$10. 20 \overline{)14660}$$

$$11. 40 \overline{)3456}$$

$$12. 80 \overline{)56380}$$

Dividing by a Two-Digit Number

Divide.

$\begin{array}{r} 35 \text{ R } 58 \\ 71 \overline{)2543} \\ \underline{213} \\ 413 \\ \underline{355} \\ 58 \end{array}$ <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 70×3 70×5 </div>	$\begin{array}{r} 6 \\ 62 \overline{)3821} \\ \underline{372} \end{array}$ <div style="display: flex; justify-content: space-around; margin-top: 5px;"> 60×6 </div>	$56 \overline{)5460}$	$41 \overline{)98766}$
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5. $19 \overline{)1672}$

6. $91 \overline{)6532}$

7. $78 \overline{)64506}$

8. $82 \overline{)21074}$

Dividing by a Two-Digit Number

Estimate the quotient. Then divide to find the quotient.

$\begin{array}{r} 78 \text{ R } 11 \\ 42 \overline{)3287} \\ \underline{294} \\ 347 \\ \underline{336} \\ 11 \end{array}$ <div style="display: flex; justify-content: space-around; margin-top: 5px;"> $40 \overline{)3200}$ Estimate first. </div>	$\begin{array}{r} 80 \\ 93 \overline{)27319} \end{array}$ <div style="display: flex; justify-content: space-around; margin-top: 5px;"> $90 \overline{)27000}$ Estimate first. </div>	$69 \overline{)512}$
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4. $32 \overline{)2539}$

5. $18 \overline{)1659}$

6. $68 \overline{)5504}$

7. $59 \overline{)5369}$

8. $41 \overline{)12209}$

9. $92 \overline{)3647}$

Dividing by a Three-Digit Number

Divide.

$\begin{array}{r} 62 \text{ R}38 \\ 302 \overline{)18762} \\ \underline{1812} \\ 642 \\ \underline{604} \\ 38 \end{array}$	$\begin{array}{r} 4 \\ 417 \overline{)16829} \\ \underline{1668} \end{array}$	$3. \quad 400 \overline{)12561}$	$4. \quad 672 \overline{)58464}$
--	--	----------------------------------	----------------------------------

$$5. \quad 179 \overline{)64430}$$

$$6. \quad 814 \overline{)53724}$$

$$7. \quad 569 \overline{)76892}$$

$$8. \quad 911 \overline{)65748}$$

$$9. \quad 549 \overline{)43551}$$

$$10. \quad 768 \overline{)90019}$$

$$11. \quad 478 \overline{)37984}$$

$$12. \quad 219 \overline{)47961}$$

Solve. Show your work.

13. The pension fund paid \$81 000 to 324 persons. All received equal amounts. How much did each receive?

14. 2456 kg of seed were to be distributed among 8 bins. How many kilograms should go into each bin?

15. The 32 teams began tryouts with 1024 players. What was the average number of players trying out per team?

16. The 3000 m of twine had to be cut into 40 pieces of equal length. How long would each piece be?

17. Shelby planned to read three books with a total of 1260 pages during February. How many pages should he read on the average for each of February's 28 d to finish the book?

18. The bottling plant filled 5250 bottles today. The bottles are placed in packages of 6. How many packages of 6 did the plant make today?

Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \ \$27.34 \\ 19.86 \\ + 4.55 \\ \hline \end{array}$$

$$2. \ 27 \overline{)497}$$

$$3. \ 32 \overline{)6041}$$

$$\begin{array}{r} 4. \ 2079 \\ - 406 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \ 274 \\ \times 38 \\ \hline \end{array}$$

$$6. \ 20 \overline{)4320}$$

$$\begin{array}{r} 7. \ 55\,470 \\ 9\,860 \\ + 3\,215 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \ \$4302 \\ - 457 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \ 83 \\ \times 67 \\ \hline \end{array}$$

$$10. \ 24 \overline{)1488}$$

$$\begin{array}{r} 11. \ 383 \\ \times 127 \\ \hline \end{array}$$

$$12. \ 18 \overline{)14031}$$

$$\begin{array}{r} 13. \ 2620 \\ - 1738 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \ 27\,341 \\ \times 8 \\ \hline \end{array}$$

$$15. \ 71 \overline{)62\,830}$$

$$16. \ 271 \times 145$$

$$17. \ 268 + 3104 + 92$$

$$18. \ 1000 \div 127$$

Solve. Show your work.

19. The 170 volunteers collected donations from 8840 households for flood victims. On the average how many households did each volunteer visit?

20. Each of the 33 telephone operators phoned 85 customers to ask how they felt about their telephone service. How many customers were phoned?

21. Three women contributed to the lunch fund for the nursery school program. One gave \$15.00, a second gave \$18.75, and a third gave \$11.50. What was their total contribution?

22. Two routes have been examined for a pipeline. One goes 1778 m through the hills and the other travels 1289 m through the valley. How much shorter is the valley route?

NAME _____

SPM6/U5/82-83

Tenths and Hundredths

Write the decimal and the word name for each.

1.

ones	tenths	hundredths
2	3	1

 2.31
two and thirty-one hundredths

2.

tens	ones	tenths
2	3	1

 23.1

3.

ones	tenths	hundredths
0	5	6

4.

ones	tenths	hundredths
1	6	2

5.

tens	ones	tenths
4	2	6

6.

ones	tenths	hundredths
0	1	8

7.

ones	tenths	hundredths
0	0	7

8.

ones	tenths	hundredths
1	0	4

SPM6/U5/84-85

Thousandths and Ten-Thousandths

Write the decimal.

1. six and two hundred one thousandths 6.201

2. one and fifty-four thousandths

Write the words.

3. 1.3002 one and three thousand two ten-thousandths

4. 8.172

Write the decimal.

5. three and two hundred five thousandths

6. two hundred and forty-nine thousandths

7. two hundred forty-nine thousandths

8. four and twelve ten-thousandths

Write the words.

9 5.806

10. 0.005

11. 2.6125

12. 2.040

13. 4.0308

14. 0.687

Comparing Decimals

Use $>$, $<$, or $=$ to make true statements.

1. $8.42 \underline{>} 8.4028$	2. $6.3700 \underline{\quad} 6.37$	3. $0.208 \underline{\quad} 0.2800$
4. $5.4127 \underline{\quad} 5.4121$	5. $8.91 \underline{\quad} 8.9100$	6. $8.36 \underline{\quad} 8.1$
7. $0.8817 \underline{\quad} 0.9$	8. $0.21 \underline{\quad} 0.211$	9. $4.3120 \underline{\quad} 4.312$
10. $5.0832 \underline{\quad} 5.038$	11. $12.777 \underline{\quad} 127.77$	12. $2.89 \underline{\quad} 2.9$
13. $3.2 \underline{\quad} 3.1001$	14. $26.010 \underline{\quad} 26.0100$	15. $2.123 \underline{\quad} 2.132$
16. $0.0608 \underline{\quad} 0.0068$	17. $4.234 \underline{\quad} 4.239$	18. $1.355 \underline{\quad} 1.3355$
19. $2 \underline{\quad} 2.000$	20. $10.01 \underline{\quad} 10.0010$	21. $10.010 \underline{\quad} 10.110$

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Ordering Decimals

List from least to greatest.

1. 0.101, 0.111, 0.1, 0.01 0.01, 0.1, 0.101, 0.111	2. 1.91, 1.119, 1.19, 1.9 1.119,
3. 1.28, 1.208, 1.282, 1.2	4. 0.3217, 0.327, 0.3, 0.302

5. 7.521, 7.052, 7.5, 75.2

6. 0.5014, 0.514, 0.51, 0.504

7. 10.001, 1.0001, 0.1001, 100.1

8. 6.2, 6.202, 6.022, 6.22

List from greatest to least.

9. 6.2, 6.021, 60.2, 6.12

10. 0.002, 0.2, 0.02, 0.202

11. 7.1, 7.010, 7.001, 7.11

12. 0.58, 0.581, 0.51, 0.508

13. 0.7341, 0.703, 0.74, 0.074

14. 1, 1.2, 1.012, 1.21

Practice

Write the decimals.

1. four-tenths

2. nine and nine-tenths

3. four and thirty-two hundredths

4. seven and two-hundredths

5. thirty-seven thousandths


6. five and six-thousandths

7.

ones		tenths		hundredths
8		2		9

8.

ones		tenths		hundredths		thousandths
2		3		4		6

9. 
0.150 0.160

10. six hundred twenty-two ten-thousandths

Write the words.

11. 2.7

12. 0.18

13. 6.37

14. 8.095

15. 0.189

16. 2.1902

Use $>$, $<$, or $=$ to make true statements.

17. 1.755 ____ 1.75

18. 5.2525 ____ 5.2552

19. 0.198 ____ 0.1098

20. 5.6210 ____ 5.621

21. 3.908 ____ 3.0980

22. 8.109 ____ 8.091

List from least to greatest.

23. 2.8, 2.08, 2.208, 2.028

24. 5.32, 5.302, 5.232, 5.3032

25. 0.6, 0.06, 0.0606, 0.606

26. 1.8521, 1.825, 1.8512, 1.852

List from greatest to least.

27. 3.06, 3.606, 3.066, 3.6066

28. 1.939, 1.399, 1.93, 1.39

29. 0.845, 0.8054, 0.8405, 0.85

30. 3.2, 3.203, 32.002, 3.23

Adding Decimals

Add.

1. $\begin{array}{r} 3.578 \\ 2.965 \\ \hline 6.543 \end{array}$	2. $\begin{array}{r} 3.854 \\ 0.61 \\ 2.4 \\ \hline 1.388 \\ 2 \end{array}$	3. $\begin{array}{r} 9.731 \\ 1.706 \\ \hline \end{array}$	4. $\begin{array}{r} 9.21 \\ 4.286 \\ \hline 6.0725 \end{array}$	5. $\begin{array}{r} 3.4 \\ 16.5 \\ 0.062 \\ \hline 7.36 \end{array}$
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$$\begin{array}{r} 6. 2.523 \\ 7.39 \\ \hline 0.817 \end{array}$$

$$\begin{array}{r} 7. 26.475 \\ 12.7 \\ \hline 9.08 \end{array}$$

$$\begin{array}{r} 8. 6.02 \\ 4.38 \\ \hline 15.385 \\ 8.5 \end{array}$$

$$\begin{array}{r} 9. \$14.10 \\ 7.36 \\ \hline 21.08 \end{array}$$

$$\begin{array}{r} 10. 4.2783 \\ 2.069 \\ \hline 0.8 \end{array}$$

$$11. 5.00 + 3.465 + 11.37 + 8.32$$

$$12. 45.15 + 8.947 + 7.86 + 4.56$$

Practice

Solve. Show your work.

- Jung lined up three circuit boards end to end. The first was 12.71 cm, the second 6.96 cm, and the third 4.38 cm long. How long was the circuit board formed in this way?
- When the votes were counted, 12 894 had voted for the Progressive Conservatives and 13 041 had voted for the Liberals. By how many votes did the Liberals win?
- Janet and Patty pack the bulbs for shipment in cartons. 75 bulbs fit in each carton. 25 cartons fit in a packing crate. How many bulbs does each crate hold?
- The camp kitchen made 534 doughnuts. The 178 campers share them equally. How many doughnuts does each camper receive?
- A shipment of 1068 bags of fertilizer are sent to a store. 6 workers share equally in the unloading. How many bags does each worker handle?

Adding Decimals and Whole Numbers

Add.

1. $3.6 + 7 + 15.481$	$\begin{array}{r} 3.6 \\ 7 \\ \underline{15.481} \\ 26.081 \end{array}$	2. $5 + 7.29 + 3.6$
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3. $23 + 5.625 + 1.434$

4. $7 + 3.0145 + 6.59$

5. $8 + 4.709 + 3$

6. $5.04 + 7 + 2.5 + 6 + 3.067$

7. $35.27 + 28.4 + 30 + 6.486$

8. $\$15 + \$3.75 + \$4.50 + \6

Subtracting Decimals

Subtract.

1. $0.8705 - 0.4232$	2. $512.3 - 360.9$	3. $4.6 - 3.7009$	4. $\$97.50 - \4.80
0.4473	4		

5. $6.235 - 4.935$

6. $24.006 - 3.758$

7. $\$35.02 - 34.75$

8. $94.063 - 6.78$

9. $46.1 - 8.26$

10. $68.7 - 9.336$

11. $4.537 - 0.8$

12. $\$3.40 - 0.55$

13. $20.08 - 13.67$

14. $0.3 - 0.208$

15. $75.068 - 8.5$

16. $6.005 - 2.8$

17. $15.72 - 2.7335$

Subtracting Decimals and Whole Numbers

Subtract.

1. $5 - 2.25$	$\begin{array}{r} ^4^9^{10} \\ 5.00 \\ \underline{2.25} \\ 2.75 \end{array}$	2. $3 - 0.9456$	$\begin{array}{r} 3.0000 \\ \underline{0.9456} \end{array}$	3. $107 - 8.98$
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4. $\$4 - \2.76

5. $5.623 - 3$

6. $63 - 4.89$

7. $7 - 5.0086$

8. $\$9 - \3.45

9. $8.7 - 2$

10. $28 - 3.4658$

11. $\$7.87 - \4

12. $657 - 8.45$

13. $20 - 7.99$

14. $68 - 5.857$

15. $9.7 - 3$

Practice

Solve. Show your work.

- Everyone who ran the qualifying race under 15 s entered the final. Meg ran the race in 13.83 s. How many seconds better than the qualifying time is this?
- The moving van has a height of 3.5 m. It passed under a bridge with a clearance of 4.2 m. How much room did the truck have to spare?
- Olga's letter had a mass of 17.3 g. The envelope had a mass of 9.14 g. Together what was their mass?
- \$9720 was donated at 27 collection points in town for flood victims. What was the average amount collected at each collection point?
- Gina's mother worked 8 h a day, 5 d a week for 6 weeks at the factory. She earned \$7 for each hour of work. How much did she earn at the factory?
- In the public opinion poll, 7384 favored the question, 2917 opposed it, and 721 had no opinion. In all, how many people were questioned?

Rounding Decimals

Round to the

nearest one:	1. 24.9 <u>25</u>	2. 1.098 _____	3. 3.475 _____
nearest tenth:	4. 4.75 <u>4.8</u>	5. 0.629 _____	6. 30.5803 _____
nearest hundredth:	7. 2.1039 <u>2.10</u>	8. 3.125 _____	9. 2.697 _____
nearest thousandth:	10. 0.4996 <u>0.500</u>	11. 4.3209 _____	12. 7.3581 _____

nearest one:	13. 5.5 _____	14. 3.98 _____	15. 16.495 _____
nearest tenth:	16. 23.92 _____	17. 9.9806 _____	18. 20.307 _____
nearest hundredth:	19. 0.0282 _____	20. 8.8845 _____	21. 6.0608 _____
nearest thousandth:	22. 3.8054 _____	23. 2.6995 _____	24. 7.5550 _____

SPM6/U5/100-101

Estimating Sums and Differences

Estimate each result. Then find the exact result.

<p>Estimate first.</p> <p>1. $2.8 \rightarrow 3$ $+ 3.1 \rightarrow 3$ <u>5.9</u> 6</p> <p>Then add.</p>	<p>Estimate first.</p> <p>2. $1.27 \rightarrow 1.3$ $- 0.884 \rightarrow 0.9$ <u> </u></p> <p>Then add.</p>	<p>3. 6.75 $+ 0.781$ <u> </u></p>	<p>4. $\\$9.16$ $- 5.54$ <u> </u></p>
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5. 9.7 $+ 7.2$ <u> </u>	6. 0.771 $+ 0.284$ <u> </u>	7. $\$4.26$ $- 1.08$ <u> </u>	8. 3.906 $- 4.018$ <u> </u>
--	--	--	--

9. 3.89 $+ 1.983$ <u> </u>	10. 10.282 $- 5.7$ <u> </u>	11. 0.375 $- 0.0267$ <u> </u>	12. $\$7.96$ $+ 3.00$ <u> </u>
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13. $6.742 - 1.0881$	14. $1.691 + 5.41$	15. $\$5.92 - \4.75
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Practice

Perform the indicated operation.

1.
$$\begin{array}{r} 3.841 \\ + 6.7 \\ \hline \end{array}$$

2.
$$17 \overline{)9031}$$

3.
$$\begin{array}{r} 12.2 \\ - 7.163 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 287 \\ \times 63 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 42\,186 \\ 9\,071 \\ + 17\,255 \\ \hline \end{array}$$

6.
$$5 \overline{)2735}$$

7.
$$\begin{array}{r} \$5 \\ - 2.38 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 337 \\ \times 60 \\ \hline \end{array}$$

9.
$$183 \overline{)4206}$$

10.
$$\begin{array}{r} 6.819 \\ 7.34 \\ + 0.6 \\ \hline \end{array}$$

11. 506×138

12. $4.6 + 7.32 + 0.088$

13. $624 \div 12$

Solve. Show your work.

14. In our town 932 km of roadway were repaired and 17.6 km of new road were built. Together how many kilometres of road were worked on?

15. The Bruce family grew 82 170 kg of hay on 15 ha of land. What was the average amount of hay on each hectare?

16. The average mass of a small tractor on an assembly line was 455 kg. What was the total mass of a shipment of 25 such tractors?

17. To tie a school record Amy had to run the last lap of the race in 54 s. She ran it in 52.57 s. By how many seconds did she beat the old record?

18. Amad's mother told him to pay for the \$6.55 cleaning bill with a ten-dollar bill. How much change should he receive?

19. Mr. Li's factory shipped 42 713 t of product this year and 63 083 t last year. What was the total for the two years?

Measuring and Estimating Length

Tell whether you would use millimetre, centimetre, metre, or kilometre to measure each of these.

1. the width of this paper <i>centimetre</i>	2. the length of an ant	3. the distance from home to school
4. the height of the ceiling	5. the length of your ear	6. the thickness of an eraser
7. the distance from school to a park	8. the height of a soft drink can	9. the length of a fence near the school
10. the height of a stack of three dimes	11. the distance you can throw a ball	12. the length of a school bike rack
13. Give an estimate for each of the above.	14. If possible, measure each of the above.	

Practice

Solve. Show your work.

1. Kenny received a parcel which had a mass of 3.28 kg. His sister received a 7 kg parcel. How much lighter was Kenny's parcel?

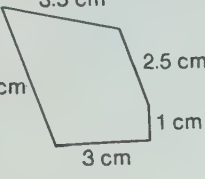
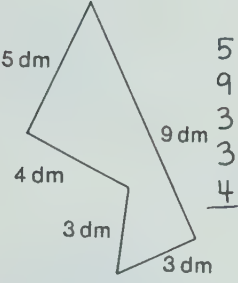
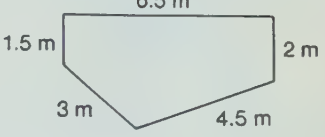
2. 12 000 advertising pieces were distributed equally to 30 agencies. How many pieces did each receive?
3. When the Lo family bought a new car the price was \$7045. They received \$586 as a trade-in on their old car. How much did they have to pay?

4. Each of the lorries held 7866 kg of cargo. 23 full lorries were used to ship material to the base. How much material was shipped?
5. Jana put her model together from three pieces of plastic. One had a mass of 7.612 g. Another had a mass of 2.4 g. The mass of the third was 4.88 g. What was the total mass?

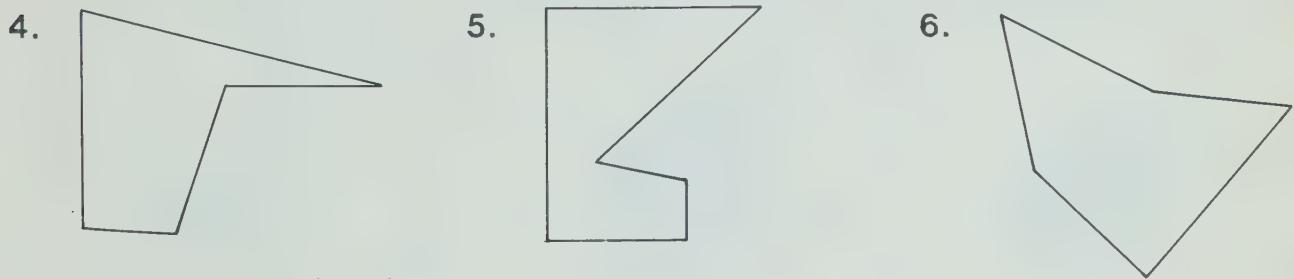
6. The Verde's vacation trip covered 8413 km by air, 1677 km by rail, and 970 km by road. Altogether, how far did they travel?

Finding Perimeter

Find the perimeter of each.

<p>1. </p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> $\begin{array}{r} 3.5 \\ 2.5 \\ 1.0 \\ 3.0 \\ \hline 4.5 \\ 14.5 \text{ cm} \end{array}$ </div> </div>	<p>2. </p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> $\begin{array}{r} 5 \\ 9 \\ 3 \\ 3 \\ \hline 4 \end{array}$ </div> </div>	<p>3. </p>
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Measure to the nearest centimetre. Then find the perimeter.



Find the perimeter of each.

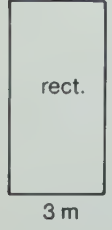
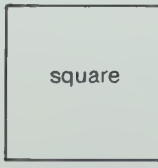
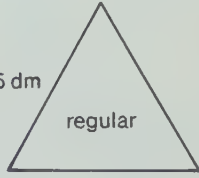
7. a pentagon with sides of 10 m, 9 m, 4 m, 3.5 m, and 7 m

8. a polygon with sides of 9 cm, 3 cm, 3 cm, 6 cm, 2 cm, and 5 cm

9. a quadrilateral with sides of 4.5 dm, 4.5 dm, 3 dm, and 3 dm

Using a Rule to Find Perimeter

Find the perimeter.

<p>1. </p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> $\begin{array}{r} 2 \times 3 \\ 2 \times 6 \\ \hline 12 \end{array}$ </div> <div> $\begin{array}{r} 6 \\ 12 \\ \hline 18 \text{ m} \end{array}$ </div> </div>	<p>2. </p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> $\begin{array}{r} 4 \times 10 \end{array}$ </div> </div>	<p>3. </p>
---	---	---

4. a rectangle, 5 km by 7 km

5. a regular hexagon with each side of length 3 cm

6. a square with a side of length 9 m
7. an arena floor 30 m long and 16 m wide

8. a piece of paper 28 cm by 22 cm

9. a regular octagon with sides of length 14 cm

Practice

Choose a unit of measurement for each.

1. the length of the main street in your town
2. the thickness of a slice of bread
3. the length of a pencil
4. the length of a flagpole

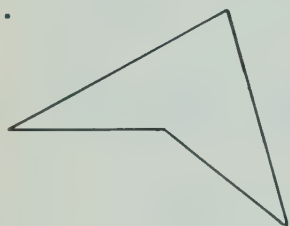
Choose a unit of measurement for each.

Estimate. Then measure to the nearest unit.

5. the distance from your knee to your ankle
6. the length of your thumbnail

Measure to the nearest centimetre. Then find the perimeter.

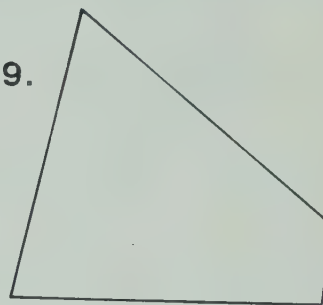
7.



8.

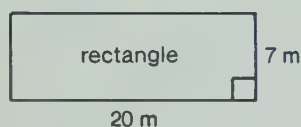


9.

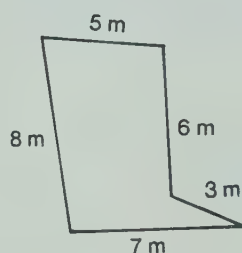


Find the perimeter of each.

10.

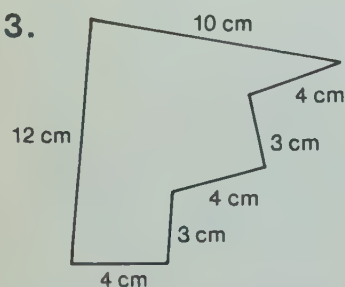


11.

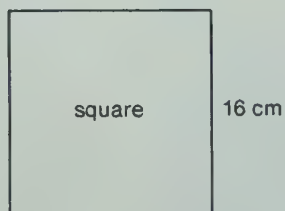


12. a triangle with sides of 27 mm, 32 mm, and 44 mm

13.



14.



15. a rectangle 5 km by 9 km

16. a square with sides of 10 m

17. a rectangle with base 4 cm, height 8 cm

18. a regular hexagon with sides of 7 cm

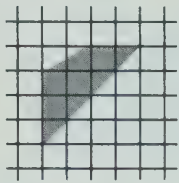
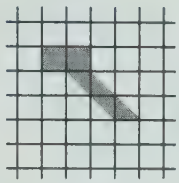
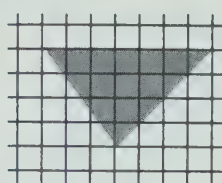

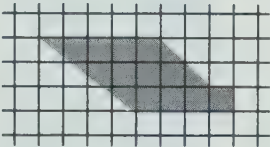
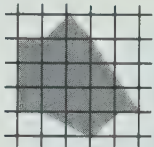
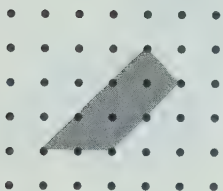
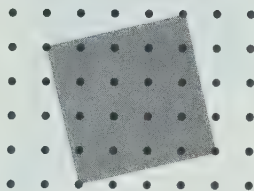
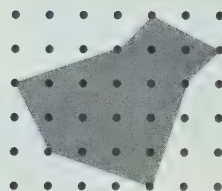
19. a floor that is 34 m long and 20 m wide

20. an exercise mat 58 cm wide and 148 cm long

21. a regular pentagon with sides of 14 cm

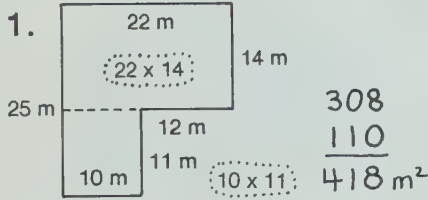
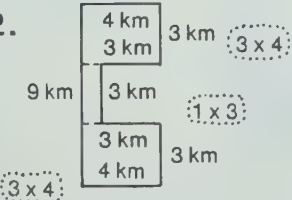
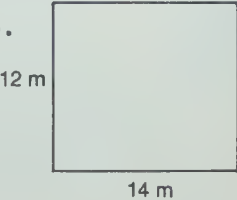
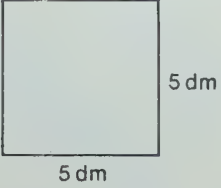
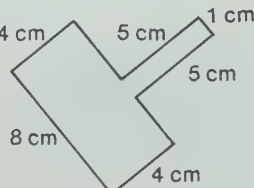
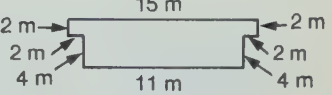
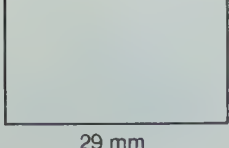
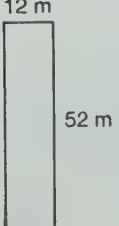
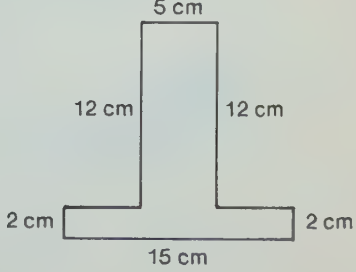
Counting to Find the Area

Find the area of each shape. Each square represents 1 cm^2 .

<p>1. </p> <p style="text-align: right;">7 cm^2</p>	<p>2. </p>	<p>3. </p>
<p>4. </p>	<p>5. </p>	<p>6. </p>
<p>7. </p>	<p>8. </p>	<p>9. </p>

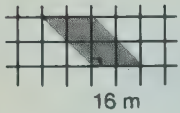
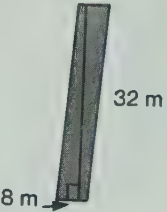
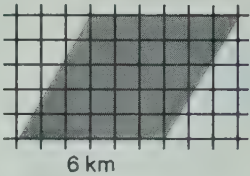
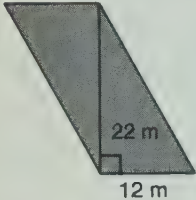

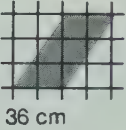
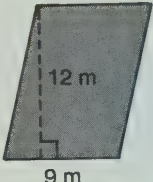
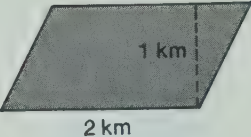
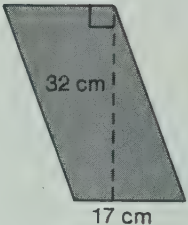
Using a Rule to Find Area

Find the area.

<p>1. </p>	<p>2. </p>	<p>3. </p>
<p>4. </p>	<p>5. </p>	<p>6. </p>
<p>7. </p>	<p>8. </p>	<p>9. </p>


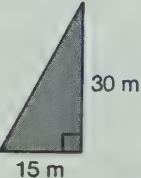
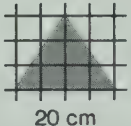
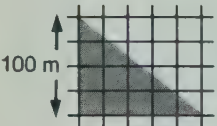
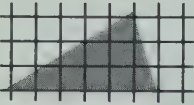
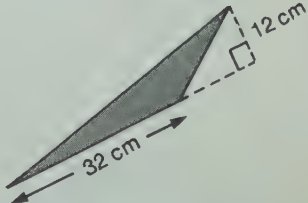
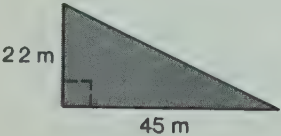

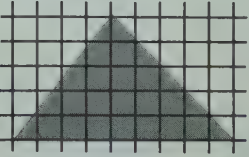
Finding the Area of a Parallelogram

Find the area.

<p>1. </p> <div style="display: flex; align-items: center;"> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px; margin-right: 10px;">Area = base x height</div> <div style="text-align: right;"> $\begin{array}{r} 16 \\ 16 \\ \hline 96 \\ 16 \\ \hline 256 \text{ m}^2 \end{array}$ </div> </div>	<p>2. </p> <div style="text-align: right;"> $\begin{array}{r} 32 \\ 8 \\ \hline \end{array}$ </div>	<p>3. </p>
<p>4. </p>	<p>5. </p>	<p>6. </p>
<p>7. </p>	<p>8. </p>	<p>9. </p>

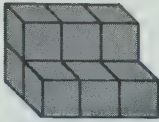
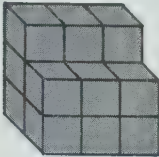
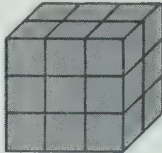
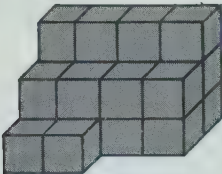
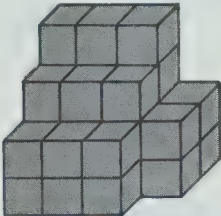
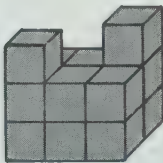
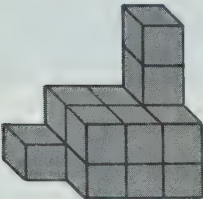
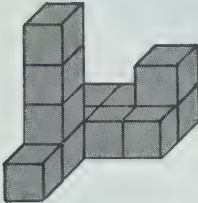
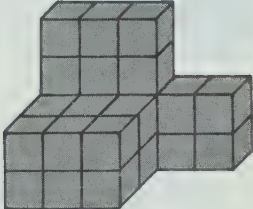
Finding the Area of a Triangle

Find the area.

<p>1. </p> <div style="display: flex; align-items: center;"> <div style="border: 1px dashed black; border-radius: 15px; padding: 2px; margin-right: 10px;">Area = $\frac{\text{base} \times \text{height}}{2}$</div> <div style="text-align: right;"> $\begin{array}{r} \frac{22 \times 12}{2} \\ = \frac{264}{2} \\ = 132 \text{ cm}^2 \end{array}$ </div> </div>	<p>2. </p> <div style="text-align: right;"> $\frac{15 \times 30}{2}$ </div>	<p>3. </p>
<p>4. </p>	<p>5. </p>	<p>6. </p>
<p>7. </p>	<p>8. </p>	<p>9. </p>

Finding Volume by Counting Cubes

Find the volume. Each cube represents a cubic centimetre.

1.  9cm^3	2. 	3. 
4. 	5. 	6. 
7. 	8. 	9. 

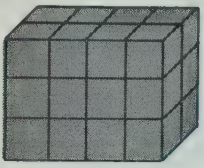
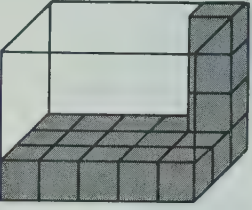
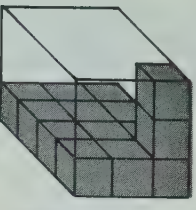
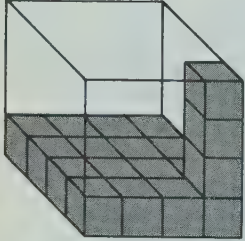
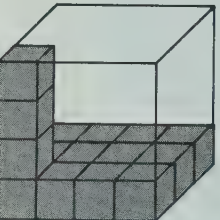
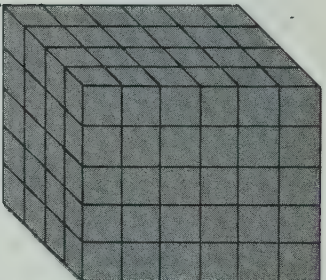
Practice

Solve. Show your work.

- Steve's crew baked bread for the college dining hall. They used 381 kg of flour, 315 kg of milk, 61 kg of shortening, and 37 kg of egg mix. What was the total mass of the ingredients?
- The helicopter flew directly to the camp. It covered 181 km. The truck which followed on the trail had to travel 356 km. How much shorter was the direct air route?
- The city block in which Karl lives is a rectangle 215 m in length and 75 m in width. What is the area of the block?
- The 17 workers in Mrs. Igo's factory assembled 3927 kits. What was the average number of kits assembled by each worker?
- The price of the dress Carol bought for the wedding was \$79.95, but Mr. Draper sold it to her for \$65.50. How much did she save?
- The seed company produced 750 packets. Each held 3.5 g of seed. How many grams of seed were used?

Finding Volume From Cubic Units in Layers

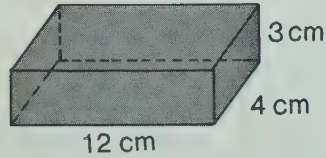
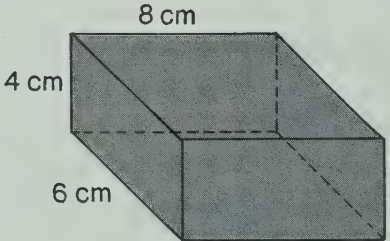
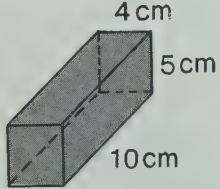
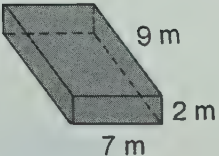
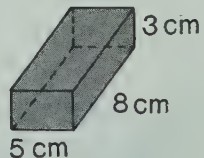
Find the volume of each rectangular prism. Each cube represents a cubic centimetre.

<p>1.  4 by 2 by 3</p> <p>$4 \times 2 \times 3 = 24 \text{ cm}^3$</p>	<p>2.  5 by 3 by 4</p>	<p>3. </p>
<p>4. </p>	<p>5. </p>	<p>6. </p>

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Finding Volume by Multiplying Area of Base by Height

Find the volume of each rectangular prism.

<p>1.  12 cm, 4 cm, 3 cm</p> <p>Volume = Area of base \times height</p> <p>$12 \times 4 \times 3 = 144 \text{ cm}^3$</p>	<p>2.  8 cm, 6 cm, 4 cm</p>	
<p>3.  10 cm, 4 cm, 5 cm</p>	<p>4.  7 m, 9 m, 2 m</p>	<p>5.  5 cm, 8 cm, 3 cm</p>

6. Base: 6 cm by 3 cm
Height: 11 cm

7. Base: 8 cm by 7 cm
Height: 6 cm

8. Base: 9 m by 9 m
Height: 9 m

9. Base: 10 cm by 5 cm
Height: 8 cm

10. Base: 11 dm by 8 dm
Height: 7 dm

11. Base: 12 m by 4 m
Height: 10 m

Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \quad 27\,410 \\ \quad 8\,693 \\ + 2\,550 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 2007 \\ - 1498 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 803 \\ \times 60 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \$16.32 \\ \quad 48.19 \\ + 20.83 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 4.7 \\ - 2.98 \\ \hline \end{array}$$

$$6. \quad 7 \overline{)4206}$$

$$7. \quad 23 \overline{)429}$$

$$\begin{array}{r} 8. \quad 4.861 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 7.4 \\ \quad 12.19 \\ + 3.865 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad \$15.00 \\ - 7.84 \\ \hline \end{array}$$

$$11. \quad 12 \times 23 \times 81$$

$$12. \quad 5 - 4.31$$

$$13. \quad 2736 + 841 + 89$$

$$14. \quad \$16 + \$7.31$$

$$15. \quad 7.6 - 2.81$$

$$16. \quad 299 \div 13$$

Solve. Show your work.

17. To prepare for the gathering of Olympic athletes, the warehouse held 145 000 kg of beverages and 62 000 kg of fresh food. In all how many kilograms were being stored?

18. The Ruperts planned a trip of 4250 km. By the end of the second week they had covered 3675 km. How much farther did they plan to go?

19. Sven's employer told him to divide the 276 candies into 6 equal piles for packaging. How many would go into each pile?

20. Mary's mother was on a diet to lose 7 kg. By the end of one month she had lost 2.6 kg. How much more did she have to lose?

21. The shipping crate has a length of 40 cm, a width of 30 cm, and a height of 25 cm. What is its volume?

22. The triangular sail for the racing boat has a base of 6.2 m and a height of 8.5 m. What is its area?

NAME _____

SPM6/U7/134-135

Multiplying Decimals and Whole Numbers

Multiply.

1. $8.97 \overset{2 \text{ places}}{\times 23}$ $\begin{array}{r} 23 \\ \times 8.97 \\ \hline 17940 \\ 2691 \\ \hline 206.31 \overset{2 \text{ places}}{} \end{array}$	2. $0.715 \overset{3 \text{ places}}{\times 42}$ $\begin{array}{r} 42 \\ \times 0.715 \\ \hline 1430 \\ 715 \\ \hline 1430 \end{array}$	3. 7.93×6 $\begin{array}{r} 6 \\ \times 7.93 \\ \hline \end{array}$	4. 53×0.978
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5. 4.69×5 $\begin{array}{r} 5 \\ \times 4.69 \\ \hline \end{array}$	6. 12.6×63 $\begin{array}{r} 63 \\ \times 12.6 \\ \hline \end{array}$	7. 0.90×18 $\begin{array}{r} 18 \\ \times 0.90 \\ \hline \end{array}$	8. 7.451×96 $\begin{array}{r} 96 \\ \times 7.451 \\ \hline \end{array}$	9. 20.43×603 $\begin{array}{r} 603 \\ \times 20.43 \\ \hline \end{array}$
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10. 412×43.8	11. 29×0.369	12. 47×90.2
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Placing the Decimal Point

Multiply.

1. $5.21 \overset{2 \text{ places}}{\times 37}$ $\begin{array}{r} 37 \\ \times 5.21 \\ \hline 15630 \\ 3647 \\ \hline 192.77 \overset{2 \text{ places}}{} \end{array}$	2. $8.2 \overset{1 \text{ place}}{\times 61}$ $\begin{array}{r} 61 \\ \times 8.2 \\ \hline 82 \end{array}$	3. 0.706×43 $\begin{array}{r} 43 \\ \times 0.706 \\ \hline \end{array}$	4. $13 \times \$7.06$
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5. 4.69×3 $\begin{array}{r} 3 \\ \times 4.69 \\ \hline \end{array}$	6. 0.567×9 $\begin{array}{r} 9 \\ \times 0.567 \\ \hline \end{array}$	7. 36.8×26 $\begin{array}{r} 26 \\ \times 36.8 \\ \hline \end{array}$	8. $\$1.24 \times 45$ $\begin{array}{r} 45 \\ \times \$1.24 \\ \hline \end{array}$	9. 27.8×307 $\begin{array}{r} 307 \\ \times 27.8 \\ \hline \end{array}$
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10. 144×0.227	11. 208×0.028	12. $42 \times \$17.09$
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Multiplying Tenths

Multiply.

1. $\begin{array}{r} 6.8 \\ \times 2.7 \\ \hline 476 \\ 1360 \\ \hline 1836 \end{array}$	2. $\begin{array}{r} 2.3 \\ \times 4.8 \\ \hline 184 \end{array}$	3. $\begin{array}{r} 7.6 \\ \times 9.7 \\ \hline \end{array}$	4. 2.4×4.1
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5. $\begin{array}{r} 4.6 \\ \times 5.7 \\ \hline \end{array}$

6. $\begin{array}{r} 3.9 \\ \times 3.9 \\ \hline \end{array}$

7. $\begin{array}{r} 95 \\ \times 0.5 \\ \hline \end{array}$

8. $\begin{array}{r} 3.5 \\ \times 7.1 \\ \hline \end{array}$

9. $\begin{array}{r} 7.9 \\ \times 3.4 \\ \hline \end{array}$

10. 0.8×7.8

11. 21.7×9.0

12. 6.5×0.1

Multiplying Hundredths and Thousandths

Multiply.

1. $\begin{array}{r} 7.63 \\ \times 4.1 \\ \hline 763 \\ 3052 \\ \hline 31.283 \end{array}$	2. $\begin{array}{r} 3.46 \\ \times 5.23 \\ \hline 1038 \end{array}$	3. $\begin{array}{r} 1.59 \\ \times 2.5 \\ \hline \end{array}$	4. 6.42×1.13
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5. $\begin{array}{r} 7.19 \\ \times 5.7 \\ \hline \end{array}$

6. $\begin{array}{r} 8.1 \\ \times 4.7 \\ \hline \end{array}$

7. $\begin{array}{r} 2.57 \\ \times 7.43 \\ \hline \end{array}$

8. $\begin{array}{r} 5.46 \\ \times 6.8 \\ \hline \end{array}$

9. $\begin{array}{r} 106.6 \\ \times 0.902 \\ \hline \end{array}$

10. 5.92×1.87

11. 2.586×0.7

12. 3.5×6.88

Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \quad 2.374 \\ \times 6.8 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 3.0001 \\ - 0.976 \\ \hline \end{array}$$

$$3. \quad 3 \overline{)27\,154}$$

$$\begin{array}{r} 4. \quad 4682 \\ \quad 374 \\ + 2915 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 3.04 \\ \times 2.75 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad \$4 \\ + 3.17 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 7419 \\ \times 86 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad \$17 \\ - 9.86 \\ \hline \end{array}$$

$$9. \quad 24 \overline{)4091}$$

$$10. \quad 20 \overline{)607}$$

$$11. \quad 2.73 \times 1.9$$

$$12. \quad (86 - 41) \times 13$$

$$13. \quad 7.139 + 2.14 + 0.8$$

Solve. Show your work.

14. Mrs. Fowler wonders how much tile she should buy for her kitchen floor. It is 2.71 m wide and 4.2 m long. What is its area?

15. The tile company tells Mrs. Fowler that the tile she wants costs \$6.85/m². She decides to buy 12 m². How much will she pay?

16. Mrs. Fowler buys the tile, cement, and some small tools. The bill comes to \$93.52. She pays with two fifty-dollar bills. How much change does she receive?

17. When Mrs. Fowler gets home she empties her purse and finds \$4.92. She decides to divide it equally among her 3 children. How much will each get?

18. The operator at the scale keeps track of the loads the three trucks are carrying. The first took 9550 kg of sand. The second took 8775 kg. The third took 10 020 kg. What was the total load for the trucks?

19. The machinist tells Mrs. Davis that the plate is 4.31 cm thick. Mrs. Davis instructs the machinist to remove another 0.615 cm from it. How thick will it be then?

Two Decimal Factors, Products Less Than 1

Multiply.

1. $\begin{array}{r} 0.03 \\ \times 0.8 \\ \hline 0.024 \end{array}$ 2 places 1 place 3 places	2. $\begin{array}{r} 0.7 \\ \times 0.6 \\ \hline \end{array}$ 1 place 1 place	3. $\begin{array}{r} 0.07 \\ \times 0.7 \\ \hline \end{array}$	4. 0.03×0.09
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5. $\begin{array}{r} 0.08 \\ \times 0.8 \\ \hline \end{array}$

6. $\begin{array}{r} 0.9 \\ \times 0.5 \\ \hline \end{array}$

7. $\begin{array}{r} 0.43 \\ \times 0.7 \\ \hline \end{array}$

8. $\begin{array}{r} 0.109 \\ \times 0.9 \\ \hline \end{array}$

9. $\begin{array}{r} 0.057 \\ \times 0.1 \\ \hline \end{array}$

10. $\begin{array}{r} 0.073 \\ \times 0.9 \\ \hline \end{array}$

11. $\begin{array}{r} 0.6 \\ \times 0.6 \\ \hline \end{array}$

12. $\begin{array}{r} 0.79 \\ \times 0.04 \\ \hline \end{array}$

13. $\begin{array}{r} 0.25 \\ \times 0.9 \\ \hline \end{array}$

14. $\begin{array}{r} 0.320 \\ \times 0.6 \\ \hline \end{array}$

15. 0.4×0.04

16. 0.923×0.2

17. 0.72×0.8

Dividing By a One-Digit Number

Divide.

1. $\begin{array}{r} 1.51 \\ 3 \overline{)4.53} \\ \underline{3} \\ 15 \\ \underline{15} \\ 03 \\ \underline{3} \\ 0 \end{array}$	2. $\begin{array}{r} 2 \\ 4 \overline{)9.76} \\ \underline{8} \end{array}$	3. $5 \overline{)0.65}$	4. $7 \overline{)1.547}$	5. $5 \overline{)3.40}$
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6. $2 \overline{)4.78}$

7. $8 \overline{)4.96}$

8. $6 \overline{)3.456}$

9. $4 \overline{)0.20}$

10. $3 \overline{)8.16}$

11. $2 \overline{)2.25}$

12. $7 \overline{)0.49}$

13. $8 \overline{)1.4}$

14. $6 \overline{)2.76}$

15. $3 \overline{)2.001}$

Dividing By a Two-Digit or Three-Digit Number

Divide.

$\begin{array}{r} 0.82 \\ 41 \overline{)33.62} \\ \underline{328} \\ 82 \\ \underline{82} \\ 0 \end{array}$	$\begin{array}{r} 2 \\ 92 \overline{)191.36} \\ \underline{184} \end{array}$	$72 \overline{)133.2}$	$625 \overline{)127.5}$
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5. $94 \overline{)766.1}$

6. $36 \overline{)115.38}$

7. $71 \overline{)65.32}$

8. $328 \overline{)6625.6}$

Rounding Quotients

Divide. Round the quotient to the nearest tenth.

$\begin{array}{r} 2.32 \rightarrow 2.3 \\ 32 \overline{)74.50} \\ \underline{64} \\ 105 \\ \underline{96} \\ 90 \\ \underline{64} \\ 26 \end{array}$	$\begin{array}{r} 0.1 \\ 14 \overline{)2.57} \\ \underline{14} \end{array}$	$7 \overline{)22.7}$	$28 \overline{)100}$
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5. $9 \overline{)56.4}$

6. $42 \overline{)308.7}$

7. $86 \overline{)83.4}$

8. $638 \overline{)1301.5}$

Round the quotient to the nearest hundredth.

9. $48 \overline{)96.3}$

10. $2 \overline{)7.75}$

11. $71 \overline{)5.54}$

12. $906 \overline{)7202}$

Practice

Perform the indicated operation.

1.
$$\begin{array}{r} 0.026 \\ \times 0.3 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 2070 \\ - 1468 \\ \hline \end{array}$$

3.
$$7 \overline{)8.61}$$

4.
$$\begin{array}{r} 52813 \\ 16023 \\ + 7414 \\ \hline \end{array}$$

5.
$$\begin{array}{r} \$738.16 \\ 4.20 \\ + 39.56 \\ \hline \end{array}$$

6.
$$23 \overline{)15.41}$$

7.
$$\begin{array}{r} 2.01 \\ - 1.68 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 15.4 \\ \times 0.18 \\ \hline \end{array}$$

9.
$$71 \overline{)7.952}$$

10.
$$\begin{array}{r} \$6.21 \\ - 3.14 \\ \hline \end{array}$$

11. $99.52 \div 32$

12. 6.1×3.75

13. $\$7 - \4.32

Solve. Show your work.

14. The air route to Toronto from Danielle's home city is 576 km. The route is 727 km by bus. How many kilometres shorter is the air route?
16. Murray kept records of all the people who used the observation tower. This week there were 1276. Last week there were 576. The week before there were 807. Altogether how many people used the tower?
18. Children's tickets to the animal show cost \$1.35. Mrs. Proctor buys 17 for the children in her class. How much does this cost?

15. Jan mailed out 32 catalogues from the printers. She paid the post office \$18.24. How much did each one cost to mail?
17. Scientists collected gold fragments from an old grave. The fragments had masses of 12.7 g, 6.39 g, 4.78 g, and 15.21 g. In all, how many grams of gold were collected?
19. Ian is trying to cut a brass rod 29.2 cm long into 4 parts of equal length. How long should each part be?

NAME _____

SPM6/U8/156-157

Metres, Decimetres, Centimetres, and Millimetres

Give each length

in metres.

1. 306 cm 3.06 m

2. 4000 mm

3. 58 dm

4. 86 cm

in centimetres.

5. 75 mm 7.5 cm

6. 8.9 m

7. 35 dm

8. 890 mm

in millimetres.

9. 0.6 m 600 mm

10. 9.2 cm

11. 0.5 dm

12. 5.13 m

in metres.

13. 1000 cm

14. 7 dm

15. 4 cm

16. 800 mm

in centimetres.

17. 3 m

18. 100 mm

19. 6 dm

20. 0.4 m

in millimetres.

21. 8 cm

22. 7 dm

23. 1.8 m

24. 0.6 cm

SPM6/U8/158-159

Units of Length, Kilometre to Millimetre

Complete.

1. 3 hm = 0.3 km

2. 5.2 km = ____ m

3. 70 m = ____ dm

4. 280 mm = 28.0 cm

5. 78 m = ____ dam

6. 2.5 km = ____ hm

7. 0.04 m = ____ mm

8. 4500 m = ____ km

9. 600 cm = ____ m

10. 300 m = ____ km

11. 0.6 km = ____ dam

12. 6.1 m = ____ cm

13. 420 m = ____ hm

14. 2000 dam = ____ km

15. 7.3 cm = ____ mm

Which length is greatest?

16. 0.075 km, 7.5 hm, 75 m

17. 0.6 dam, 7 cm, 800 dm

18. 500 mm, 0.5 m, 50 dm

19. 0.701 hm, 700 cm, 6.99 m

Capacity

Complete.

1. 3 L = <u>3000</u> mL	2. 7000 mL = ____ L	3. 0.7L = ____ mL
-------------------------	---------------------	-------------------

- | | | |
|----------------------|---------------------|---------------------|
| 4. 1620 mL = ____ L | 5. 6.2 L = ____ mL | 6. 2000 mL = ____ L |
| 7. 0.8 L = ____ mL | 8. 45 mL = ____ L | 9. 4500 mL = ____ L |
| 10. 0.09 L = ____ mL | 11. 350 mL = ____ L | 12. 10 L = ____ mL |

Which is the better unit, millilitre or litre,
for measuring the capacity of each of these?

- | | |
|-----------------------------|--------------------------|
| 13. a jar of baby food | 14. a pail of water |
| 15. a bottle of cough syrup | 16. a can of house paint |

SPM6/U8/162-163

Mass

Complete.

1. 4 kg = <u>4000</u> g	2. 6000 g = ____ kg	3. 0.58 kg = ____ g
-------------------------	---------------------	---------------------

- | | | |
|-----------------------|-----------------------|------------------------|
| 4. 3500 g = ____ kg | 5. 7.6 kg = ____ g | 6. 1050 g = ____ kg |
| 7. 58 g = ____ kg | 8. 0.7 kg = ____ g | 9. 900 g = ____ kg |
| 10. 2.075 kg = ____ g | 11. 0.048 kg = ____ g | 12. 10 000 g = ____ kg |

Which is the better unit, gram or kilogram,
for measuring the mass of each of these?

- | | |
|----------------------|-------------------------|
| 13. a bag of popcorn | 14. a horse |
| 15. a necktie | 16. your teacher's desk |

Practice

Give each length in metres.

1. 172 cm 2. 6.4 dm 3. 2300 mm

Give each length in centimetres.

4. 0.59 dm 5. 8000 mm 6. 1.7 m

Give each length in millimetres.

7. 3.2 m 8. 32 cm 9. 0.2 dm

Which length is greater?

10. 432 mm or 67 cm 11. 52 dm or 2.7 m

Complete.

12. 2000 m = ____ km 13. 0.26 km = ____ m 14. 8.2 hm = ____ m
15. 190 dam = ____ m 16. 630 mm = ____ m 17. ____ m = 8 cm
18. 7.2 m = ____ mm 19. ____ m = 0.21 dm 20. 87 hm = ____ km

Which length is greatest?

21. 872 mm, 0.7 m, or 2.1 dm 22. 41 cm, 3.9 dm, or 0.92 m
23. 0.006 km, 600 cm, or 60 000 mm 24. 499 m, 5000 cm, or 0.501 km

Complete each chart.

25.

millilitres		590		900
litres	0.2		2.35	

26.

grams		210		7
kilograms	1.45		9.9	

Choose the best estimate for

27. the amount of drink in a punch bowl. 28. the mass of a box of pencils.
29. the amount of water that fills a bottle cap. 30. the mass of a rabbit.

1 mL	1 g
1 L	100 g
100 mL	1 kg

Choose the best unit, centimetre, metre, kilometre, litre, millilitre, gram, or kilogram for measuring each of these.

31. the length of a ribbon 32. the mass of a pencil 33. the length of a pine cone
34. the mass of a stereo set 35. the length of a river 36. the height of a tree
37. the amount of water a bucket can hold 38. the mass of a bar of soap 39. the amount of medicine in an eye dropper

Volume and Capacity

Complete.

1. 2 L = <u>2</u> dm ³ or <u>2000</u> cm ³	2. 0.6 kL = <u>0.6</u> m ³ or ____ dm ³
3. 3000 cm ³ = ____ mL or ____ L	4. 40 mL = ____ cm ³ or ____ dm ³

5. 5.2 dm³ = ____ L or ____ mL
6. 0.35 L = ____ cm³ or ____ dm³
7. 0.76 m³ = ____ L or ____ kL
8. 0.8 dm³ = ____ mL or ____ L
9. 750 cm³ = ____ mL or ____ L
10. 5000 mL = ____ cm³ or ____ dm³
11. 4 m³ = ____ L or ____ kL
12. 9 kL = ____ dm³ or ____ m³

Give the capacity in litres for each rectangular prism.



13. Base: 20 cm by 10 cm
Height: 12 cm
14. Base: 9 cm by 12 cm
Height: 6 cm
15. Base: 30 cm by 30 cm
Height: 20 cm
16. Base: 14 cm by 8 cm
Height: 15 cm

Volume, Capacity, and Mass

Complete.

1. 750 mL of water has mass of <u>750</u> g and volume of <u>750</u> cm ³	2. 200 g is the mass of <u>200</u> cm ³ or ____ L of water	3. 7 kL of water has mass of ____ kg and volume of ____ m ³
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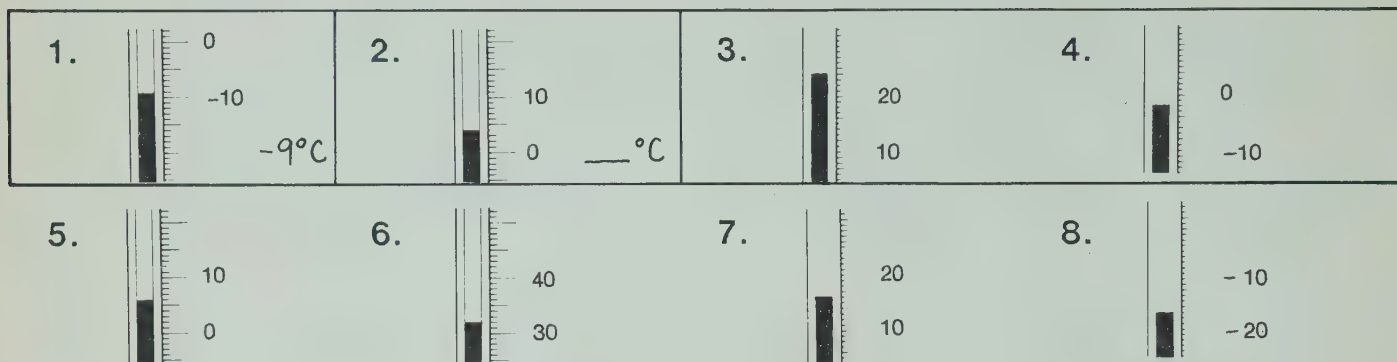
4. 7 kg is the mass of ____ L or ____ dm³ of water
5. 5 t is the mass of ____ L or ____ m³ of water
6. 4 m³ of water has mass of ____ kg and fills ____ L
7. 0.06 L of water has mass of ____ g and volume of ____ dm³
8. 500 g is the mass of ____ mL or ____ dm³ of water
9. 2000 cm³ of water has mass of ____ kg and fills ____ mL

Give the mass of water in grams and kilograms held by each rectangular prism.

10. Base: 7 cm by 4 cm
Height: 9 cm
11. Base: 90 cm by 30 cm
Height: 60 cm
12. Base: 44 cm by 85 cm
Height: 52 cm

Temperature

Give the temperature.









From the list, select a temperature for each.

- | | |
|------------------------|---------------------|
| 9. water freezes | 10. cold winter day |
| 11. hot summer day | 12. water boils |
| 13. spring or fall day | 14. pleasant day |



-10°C	0°C
10°C	20°C
30°C	100°C

Time

Write the time shown on each clock. Use a.m. or p.m.

1. 	It's October. The sun has yet to rise. 1:55:20 a.m.	2. 	It's October. The sun has set.
3. 	Supper is finished.	4. 	You are still in bed.
5. 	You have eaten lunch.	6. 	It's past bedtime.

Draw a digital clock for the time shown on the dial clock.

7. 	morning <input type="text"/>	8. 	evening <input type="text"/>
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Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \ 27\,031 \\ \ 9\,862 \\ + \ 775 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \ 4.817 \\ - 3.26 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \ 5.3 \\ \times 4.9 \\ \hline \end{array}$$

$$4. \ 14 \overline{)2701}$$

$$5. \ 5 \overline{)2.275}$$

$$\begin{array}{r} 6. \ 162 \\ \times 387 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \ \$41.07 \\ - 16.43 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \ 4.712 \\ + 6.3 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \ \$3\,815 \\ \ 962 \\ + 10\,583 \\ \hline \end{array}$$

$$10. \ 163 \overline{)4238}$$

$$11. \ 0.71 \times 0.03$$

$$12. \ 821 + 1416 + 27$$

$$13. \ \$7 - \$4.03$$

$$14. \ 5.268 \div 3$$

$$15. \ (26 - 14) \times 80$$

$$16. \ 42 \times 16 \times 81$$

Solve. Show your work.

17. Each classroom at this university holds 25 people. There are 60 classrooms. How many people do the classrooms hold?

18. A taxi driver collected \$87.16 in fares on Sunday, \$128.80 on Monday, and \$155.60 on Tuesday. What were the total receipts?

19. The suit is on sale for \$117.50. Originally it sold for \$149.95. By how much has it been reduced?

20. The sailmaker makes a triangular sail. Its base is 4 m and its height is 6.5 m. What is the area of this sail?

21. Wendy wants to store her collection of 243 paperback books. She packs them in 3 boxes with an equal number in each box. How many does she pack in each box?

22. The machine shop is making a rectangular plate 3.65 cm long and 2.8 cm wide. What will be the area of this plate?

Lines, Line Segments, and Rays

For the picture, name

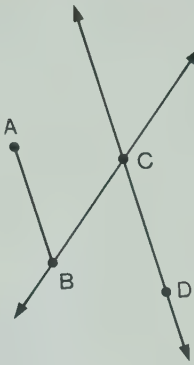
1. a line. \overleftrightarrow{BC}

2. a line segment. \overline{AB}

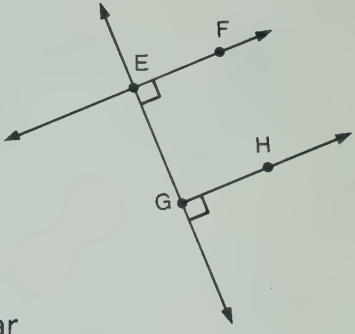
3. a ray. \overrightarrow{CD}

4. two intersecting lines. $\overleftrightarrow{BC}, \overleftrightarrow{CD}$

5. two parallel line segments. $\overline{AB}, \overline{CD}$



6. a line.
7. a line segment.
8. a ray.
9. two parallel rays.
10. two perpendicular lines.

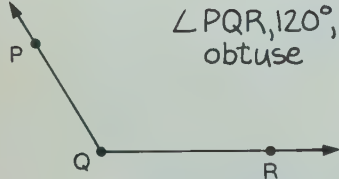


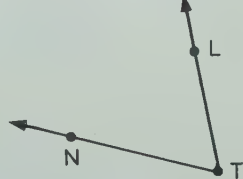
Draw and label each of these.

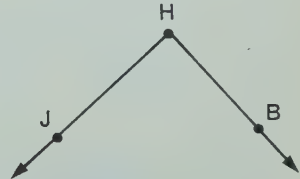
11. \overleftrightarrow{KL}
12. \overrightarrow{MP}
13. \overline{QR}
14. \overleftrightarrow{ST} parallel to \overleftrightarrow{UV}
15. \overrightarrow{WY} perpendicular to \overrightarrow{YZ}

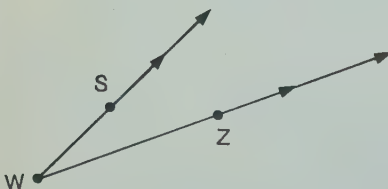
Angles

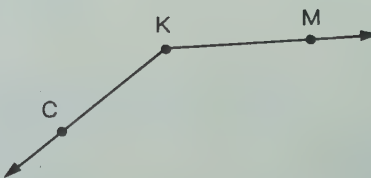
Name each angle. Measure the angle.
Tell whether it is acute, right, obtuse, or straight.


1.  $\angle PQR, 120^\circ$, obtuse

2. 

3. 

4. 

5. 







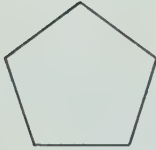
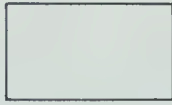

6. 

Use another sheet of paper. Draw an angle for each measurement.

7. 30°
8. 100°
9. 90°
10. 47°
11. 163°
12. 82°

Line Symmetry

Name each polygon. Draw all of its lines of symmetry.
Give the number of vertices and the number of sides of each.

<p>1.</p>  <p>regular <u>6</u> vertices hexagon <u>6</u> sides</p>	<p>2.</p>  <p>trapezoid <u> </u> vertices <u> </u> sides</p>	<p>3.</p>  <p><u> </u> vertices <u> </u> sides</p>
<p>4.</p>  <p><u> </u> vertices <u> </u> sides</p>	<p>5.</p>  <p><u> </u> vertices <u> </u> sides</p>	<p>6.</p>  <p><u> </u> vertices <u> </u> sides</p>
<p>7.</p>  <p><u> </u> vertices <u> </u> sides</p>	<p>8.</p>  <p><u> </u> vertices <u> </u> sides</p>	<p>9.</p>  <p><u> </u> vertices <u> </u> sides</p>

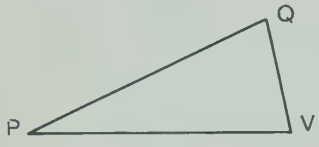
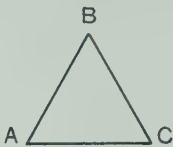

Practice

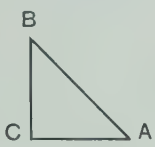
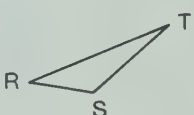
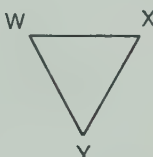
Solve. Show your work.

1. The trip by way of the tunnel is 44.9 km. By way of the bridge it is 57.3 km. How much shorter is the tunnel route?
2. Claire wants to divide her gift of \$47.22 equally among 6 children. How much will each receive?
3. In their mail-order business the Buffens have mailed out 375 catalogues each week for 7 weeks. How many catalogues is this?
4. Marie-Louise borrowed \$35 from her father. She repaid \$7.50 in July and \$11.35 in August. How much does she still owe?

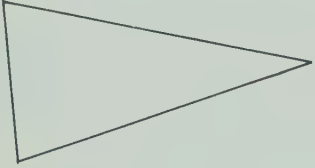
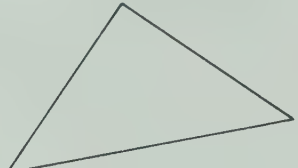
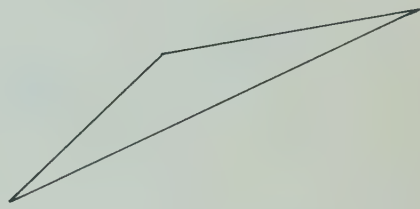
Triangles

Name each triangle. Tell whether it is equilateral, isosceles, or scalene.

1.  $\triangle PQR$, isosceles	2. 	3. 
---	--	--

4. 	5. 	6. 
--	--	--

Measure the angles of each triangle with a protractor. Tell whether the triangle is equilateral, isosceles, or scalene.

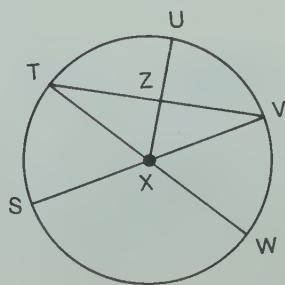
7. 	8. 	9. 
--	--	--

Circles

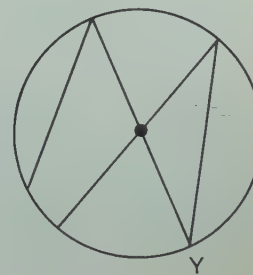
For the circle, name

1. the centre. C	6. the centre.
2. a diameter. \overline{DH}	7. a diameter.
3. a radius. \overline{CB}	8. a radius.
4. two chords. \overline{AF} , \overline{EG}	9. two chords.
5. a line of symmetry. \overline{DH}	10. a line of symmetry.

- the centre.
- two diameters.
- a radius.
- two chords.
- two lines of symmetry.



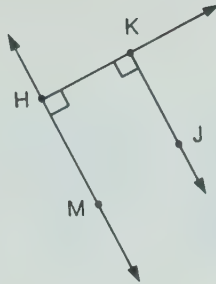
- Label
- centre W .
 - diameter XY .
 - chords YZ and ZR .
 - radius WR .



Practice

For the picture, name

1. a line.
2. a line segment.
3. a ray.
4. two parallel rays.
5. two perpendicular rays.

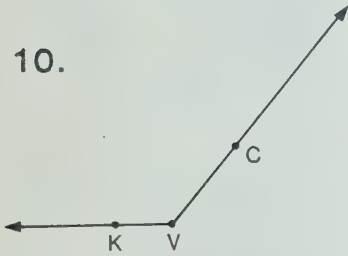


Draw and Label.

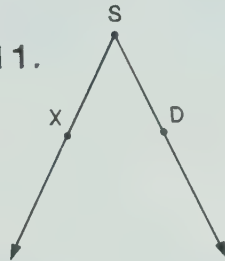
6. \overline{AB}
7. \overrightarrow{RS}
8. \overleftrightarrow{TV}
9. \overrightarrow{RX} and \overrightarrow{XY}

Name each angle. Measure the angle. Tell whether it is acute, right, or obtuse.

10.



11.



Draw an angle for each measurement.

12. 38°

13. 110°

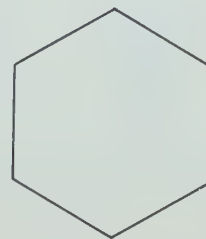
Name each polygon. Draw all of its lines of symmetry. Give the number of vertices and the number of sides of each.

14.



___ vertices
___ sides

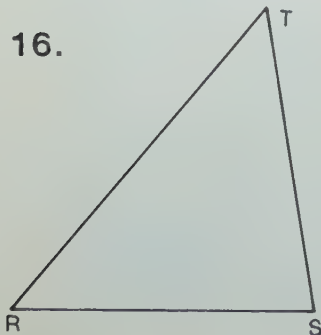
15.



___ vertices
___ sides

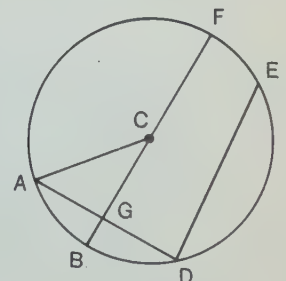
Name the triangle. Tell whether it is equilateral, isosceles, or scalene. Measure its angles.

16.



For the circle, name

17. the centre.
18. a diameter.
19. a radius.
20. two chords.
21. a line of symmetry.



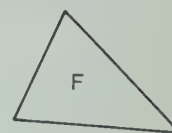
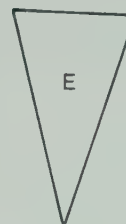
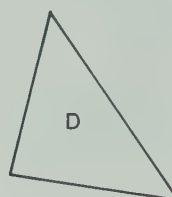
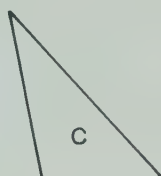
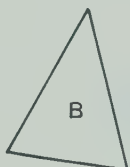
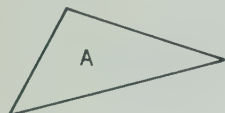
Congruent Shapes

Use tracing paper. Find two pairs of congruent shapes.

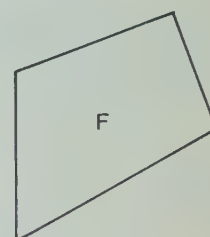
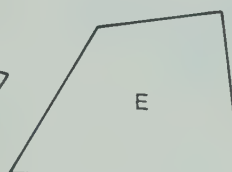
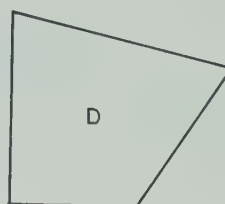
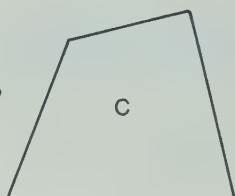
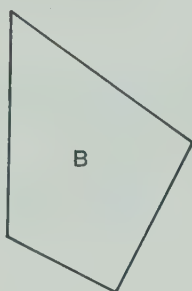
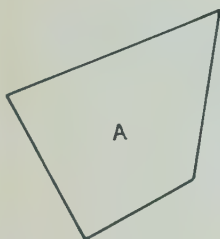
1.

the same
size and
shape

A and C, _____

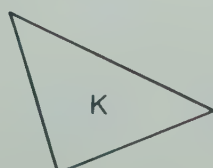
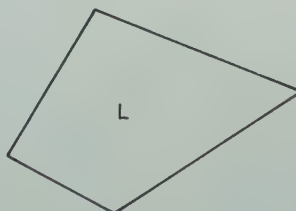
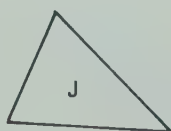
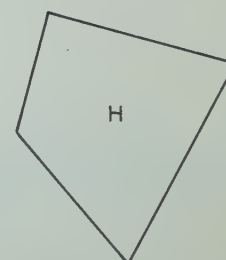
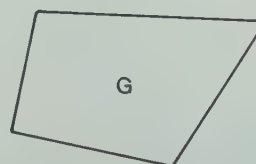
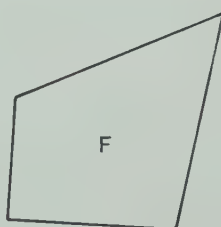
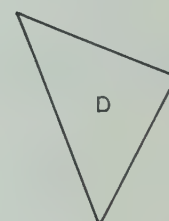
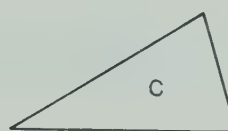
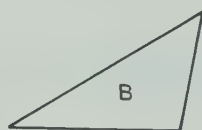
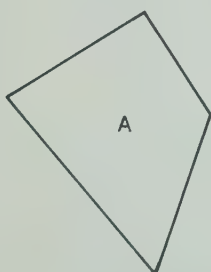


2.



Find four pairs of congruent shapes.

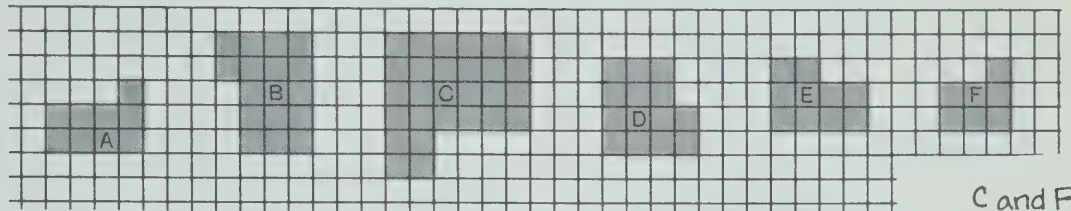
3.



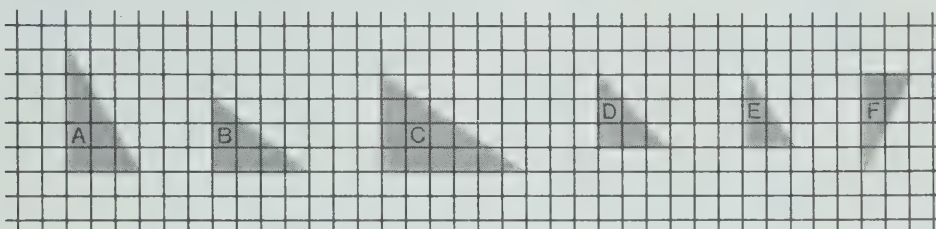
Similar Shapes

Which two shapes are similar?

1. the same shape

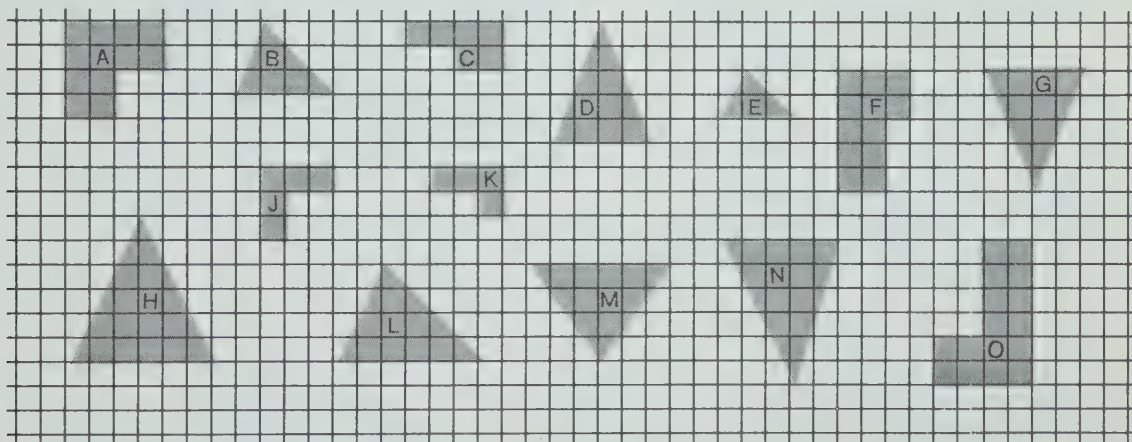


2.



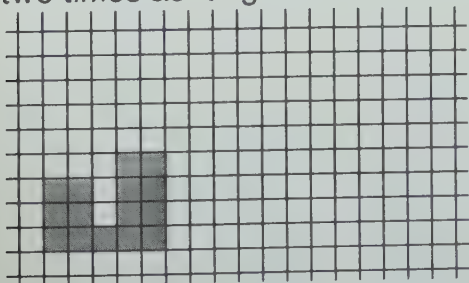
Find three pairs of similar shapes.

3.

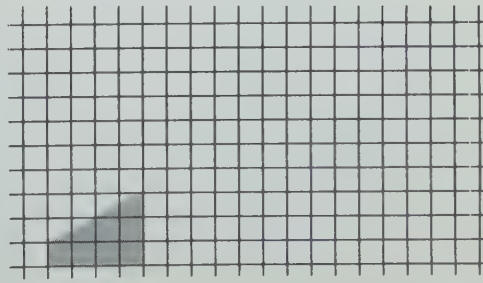


For each shape, draw a similar shape with each side

4. two times as long.



5. three times as long.



Scale Drawings

Find the real length of each of the following.
Use a centimetre ruler with the scale drawing.

1. wall A in the living room

$$4 \times 2.5 = 10$$

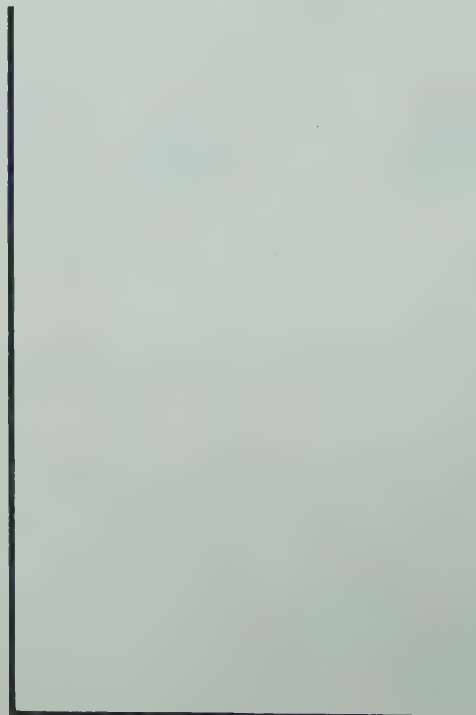
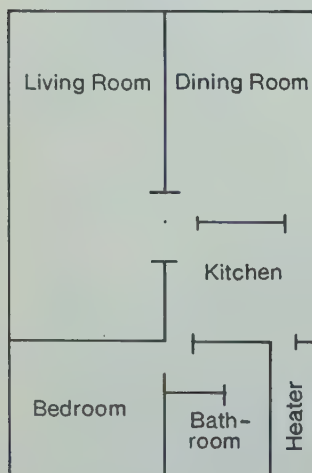
Wall A is 10 m long.

2. wall B in the living room



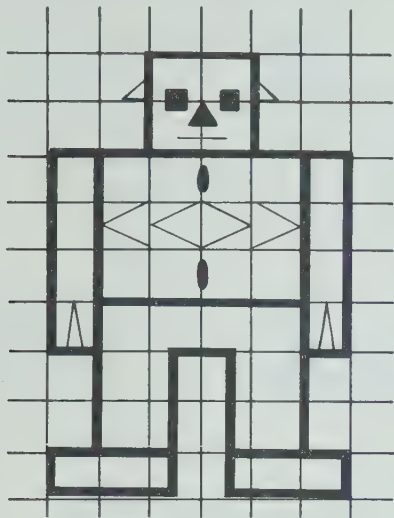
Scale: 1 cm to 2.5 m

3. the dimensions of the kitchen
4. the dimensions of the bathroom
5. How much longer than bedroom 2 is bedroom 1?
6. What are the dimensions of the closet in bedroom 2?
7. How much floor space is allowed for the heater?
8. What is the area of the kitchen?
9. Make a scale drawing of this floor plan so that lengths are 1.5 times as large as those shown here.



Copying Pictures Using Grids

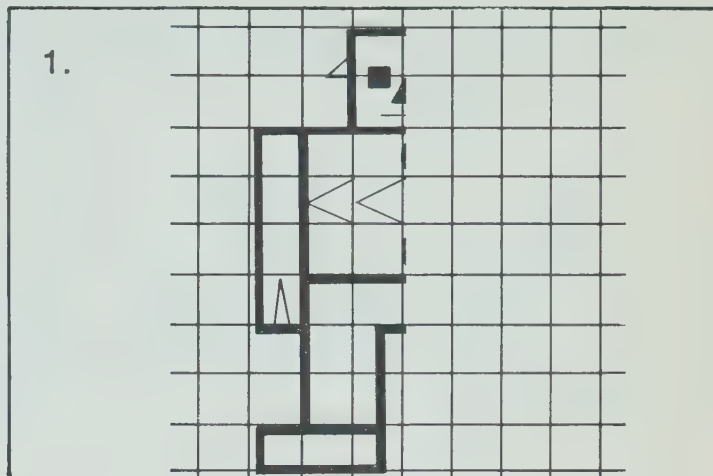
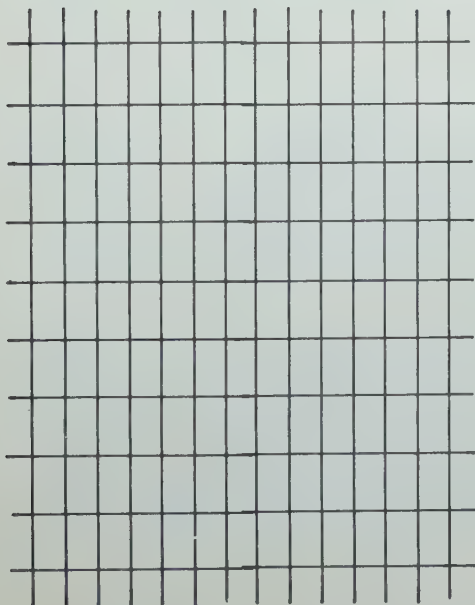
Copy this picture on each grid.



2.

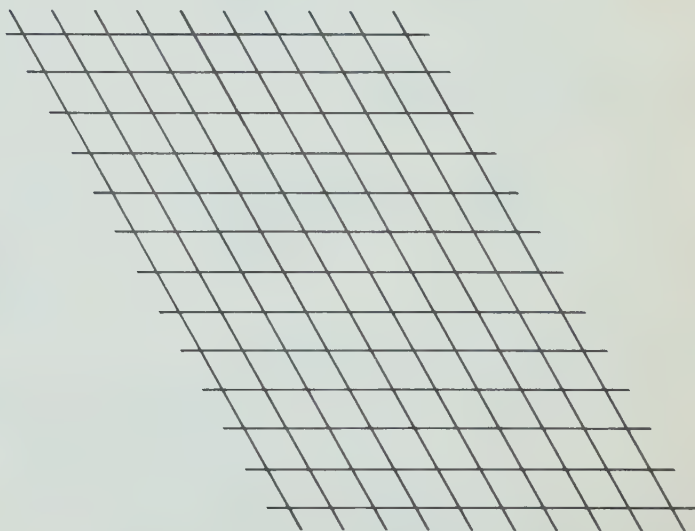


4.

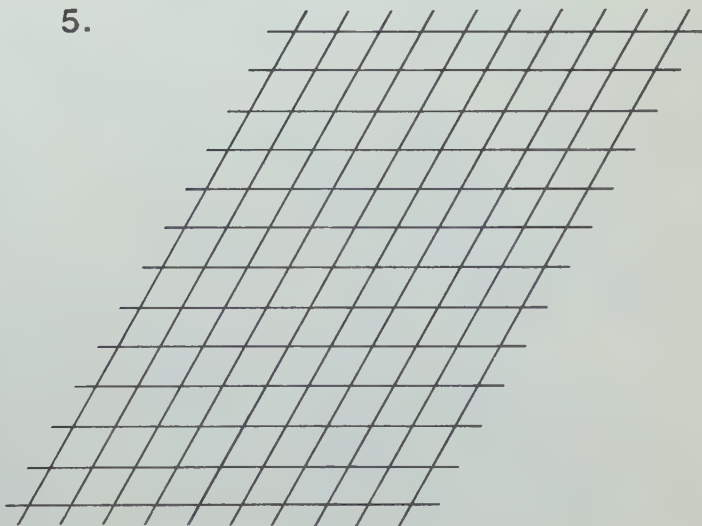


1.

3.



5.



Solid Shapes

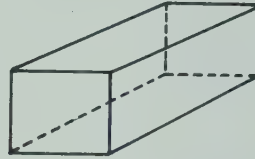
For each solid shape, give the number of vertices, the number of edges, and the number of faces. Give the shapes of the faces.

1. hexagonal pyramid



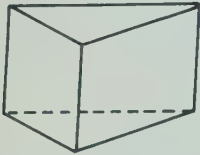
7 vertices
12 edges
7 faces
 1 hexagon, 6 triangles

2. rectangular prism



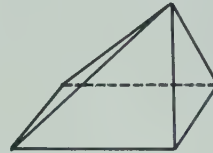
___ vertices
 ___ edges
 ___ faces

3. triangular prism



___ vertices
 ___ edges
 ___ faces

4. rectangular pyramid



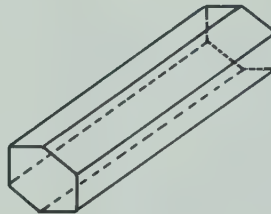
___ vertices
 ___ edges
 ___ faces

5. pentagonal pyramid



___ vertices
 ___ edges
 ___ faces

6. hexagonal prism



___ vertices
 ___ edges
 ___ faces

7. Use another sheet of paper.

Draw a pattern for each solid shape in Exercises 1-6.

Practice

Solve. Show your work.

- Jamie's family drove 255 km from Jasper to Banff in time for lunch. After lunch they continued toward home, driving 278 km. In all, how far did they travel?
- Bella is told to pack the 1152 bolts in 8 boxes, putting an equal number in each of the boxes. How many should go in a box?
- At Paco's school the long jump record is 3.71 m. Paco's best jump is 0.64 m less than the record. How long is Paco's best jump?
- The Sullivans gave 12 sixth-grade girls tickets to the gymnastics meet. The tickets cost \$3.75 each. What did all 12 tickets cost?

Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \quad 27\,409 \\ \quad 8\,663 \\ + \quad 5\,105 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 7003 \\ \quad -1846 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 7.32 \\ \quad \times 4.8 \\ \hline \end{array}$$

$$4. \quad 16 \overline{)4893}$$

$$5. \quad 6 \overline{)17.34}$$

$$\begin{array}{r} 6. \quad \$18.79 \\ \quad - 7.88 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 4.237 \\ \quad 0.46 \\ + \quad 0.8 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 207 \\ \quad \times 401 \\ \hline \end{array}$$

$$9. \quad 20 \overline{)8280}$$

$$\begin{array}{r} 10. \quad \$74.61 \\ \quad \times 8 \\ \hline \end{array}$$

$$11. \quad 1879.8 \div 241$$

$$12. \quad 5.9 \times 2.3$$

$$13. \quad 1.516 - 0.71$$

$$14. \quad \$15 - \$9.64$$

$$15. \quad 8717 + 291 + 100$$

$$16. \quad \$4.35 \times 12$$

Solve. Show your work.

17. Kikki rolls the can for one revolution. She measures that it moves exactly 27.3 cm. How far will it move if she rolls it for 3 revolutions.

18. Kikki's bother takes a different can and rolls it for 15 revolutions. It moves 279 cm. How far does it move each time it is rolled?

19. This year's fund raising for the ballet earned \$1208. Last year the fund raised \$456 less. How much was raised last year?

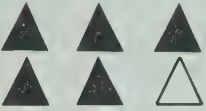







20. The large tank holds 120 000 L of oil. The 2 smaller ones each hold 85 000 L. Together, how much do the 3 tanks hold?

21. Billy measured the four angles of the quadrilateral. He found they were 51° , 108° , 85° , and 116° . What was the total measure of the four angles?

22. The 17 employees totalled 3604 h of work. They each worked the same number of hours. How many hours would that be?

Writing Fractions

Write a fraction to complete each sentence.

1.  $\frac{5}{6}$ of the triangles are shaded.	2.  $\frac{5}{5}$ of the cones have ice cream.	3.  _____ of the boxes have dots.
4.  _____ of the flowers have petals.	5.  _____ of the shapes are polygons.	6. CANADA _____ of the letters are vowels.
7.  _____ of the polygons are hexagons.	8.  _____ of the heads have hats.	9.  _____ of the glasses have water.

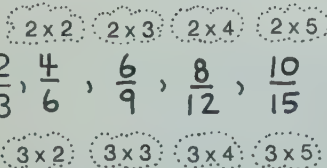
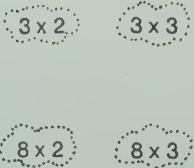
Write a sentence using a fraction for each of these. Use other paper.

10. 9 magic markers work out of a dozen.
11. Out of 20 children, 14 play dodge ball.
12. Melissa took 15 shots and made 7 baskets.

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Multiplying to Find Equivalent Fractions

Write four fractions that are equivalent to each of these.

1.  $\frac{2}{3}, \frac{4}{6}, \frac{6}{9}, \frac{8}{12}, \frac{10}{15}$	2.  $\frac{3}{8}$	3. $\frac{3}{4}$
4. $\frac{5}{6}$	5. $\frac{2}{9}$	6. $\frac{1}{2}$
7. $\frac{1}{3}$	8. $\frac{3}{5}$	9. $\frac{7}{8}$
10. $\frac{4}{7}$	11. $\frac{1}{6}$	12. $\frac{3}{10}$

Dividing to Find Equivalent Fractions

Divide the numerator and the denominator by a common factor to get an equivalent fraction.

1. $\frac{14}{21} = \frac{2}{3}$ <div style="text-align: center;">$\div 7$ $\div 7$</div>	2. $\frac{6}{12} =$ <div style="text-align: center;">$\div 6$ $\div 6$</div>	3. $\frac{16}{24} =$	4. $\frac{28}{35} =$	5. $\frac{18}{27} =$
6. $\frac{10}{25} =$	7. $\frac{9}{36} =$	8. $\frac{14}{42} =$	9. $\frac{15}{18} =$	10. $\frac{24}{48} =$
11. $\frac{36}{63} =$	12. $\frac{12}{15} =$	13. $\frac{12}{32} =$	14. $\frac{30}{54} =$	15. $\frac{21}{49} =$

16. Ring the fractions you found in each of the above exercises that are in lowest terms.

Cross Products

Find the cross products. Are the fractions equivalent?

$1. \frac{12}{15}, \frac{3}{4}$ $15 \times 3 = 45$ $12 \times 4 = 48$ <div style="text-align: center;">no</div>	$2. \frac{2}{5}, \frac{12}{30}$ 5×12 2×30	$3. \frac{8}{10}, \frac{16}{18}$
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Use cross products to find the missing term.

$4. \frac{8}{12} = \frac{6}{9}$ $12 \times ? = 8 \times 9$ $12 \times \textcircled{6} = 72$	$5. \frac{4}{10} = \frac{14}{?}$ $4 \times ? = 10 \times 14$	$6. \frac{15}{24} = \frac{?}{16}$
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Find the cross products. Are the fractions equivalent?

$7. \frac{8}{14}, \frac{12}{21}$	$8. \frac{6}{16}, \frac{12}{27}$	$9. \frac{20}{32}, \frac{15}{24}$
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Use cross products to find the missing term.

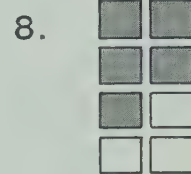
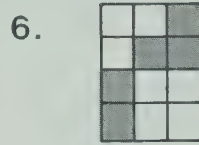
$10. \frac{3}{9} = \frac{?}{15}$	$11. \frac{14}{20} = \frac{35}{?}$	$12. \frac{15}{18} = \frac{?}{24}$
$13. \frac{20}{25} = \frac{?}{30}$	$14. \frac{9}{12} = \frac{?}{20}$	$15. \frac{8}{10} = \frac{12}{?}$

Practice

Write a fraction to show how many of the candles are lit.



Write the fraction to show how much is shaded.



Write four equivalent fractions for each of these.

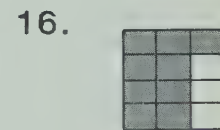
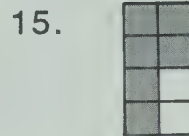
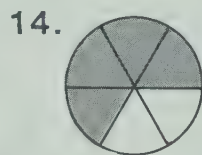
9. $\frac{2}{7}$

10. $\frac{4}{9}$

11. $\frac{1}{4}$

12. $\frac{5}{8}$

Write two equivalent fractions for each picture.



Write the fraction in lowest terms that is equivalent to each of these.

17. $\frac{15}{20}$

18. $\frac{12}{30}$

19. $\frac{8}{12}$

20. $\frac{27}{63}$

21. $\frac{28}{36}$

22. $\frac{25}{40}$

23. $\frac{20}{25}$

24. $\frac{42}{56}$

Find the cross products. Are the fractions equivalent?

25. $\frac{4}{9}, \frac{16}{36}$

26. $\frac{20}{50}, \frac{12}{30}$

27. $\frac{12}{18}, \frac{18}{27}$

28. $\frac{16}{20}, \frac{32}{45}$

Use cross products to find the missing term.

29. $\frac{6}{12} = \frac{7}{\quad}$

30. $\frac{12}{16} = \frac{27}{\quad}$

31. $\frac{9}{15} = \frac{\quad}{35}$

32. $\frac{4}{10} = \frac{\quad}{35}$

33. $\frac{\quad}{18} = \frac{40}{15}$

34. $\frac{10}{15} = \frac{\quad}{12}$

35. $\frac{21}{56} = \frac{15}{\quad}$

36. $\frac{45}{54} = \frac{35}{\quad}$

Changing to Improper Fractions

Write each as an improper fraction.

1. $4\frac{1}{3}$ $\rightarrow \frac{13}{3}$ $4 \times 3 \text{ thirds} + 1$ 13 thirds	2. $10\frac{2}{5}$ $10 \times 5 \text{ fifths} + 2$	3. $6\frac{2}{3}$	4. $7\frac{7}{9}$
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5. $8\frac{3}{4}$ 6. $5\frac{1}{4}$ 7. $5\frac{4}{7}$ 8. $4\frac{1}{6}$ 9. $3\frac{5}{8}$
10. $9\frac{4}{9}$ 11. $2\frac{1}{2}$ 12. $9\frac{3}{5}$ 13. $4\frac{5}{7}$ 14. $2\frac{3}{10}$
15. $5\frac{7}{12}$ 16. $6\frac{1}{5}$ 17. $10\frac{3}{8}$ 18. $5\frac{5}{6}$ 19. $12\frac{4}{5}$

Complete.

20. $5 = \frac{\quad}{4}$ 21. $9 = \frac{\quad}{3}$ 22. $6 = \frac{\quad}{10}$ 23. $7 = \frac{\quad}{2}$

Changing Improper Fractions

Write each improper fraction as a number in mixed form or as a whole number.

1. $\frac{21}{4}$ $5\frac{1}{4}$ $5 \text{ R } 1$ $4 \overline{)21}$	2. $\frac{33}{7}$ $4 \text{ R } 5$ $7 \overline{)33}$	3. $\frac{29}{4}$	4. $\frac{80}{9}$	5. $\frac{56}{8}$
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6. $\frac{25}{6}$ 7. $\frac{43}{9}$ 8. $\frac{21}{3}$ 9. $\frac{58}{7}$ 10. $\frac{17}{8}$
11. $\frac{14}{3}$ 12. $\frac{110}{10}$ 13. $\frac{150}{12}$ 14. $\frac{44}{5}$ 15. $\frac{81}{9}$
16. $\frac{17}{2}$ 17. $\frac{35}{5}$ 18. $\frac{80}{12}$ 19. $\frac{50}{6}$ 20. $\frac{80}{3}$

Finding Like Denominators

For each pair, find equivalent fractions with like denominators.

1. $\frac{3}{8}, \frac{5}{6}$ $\frac{9}{24}, \frac{20}{24}$ <div style="border: 1px dashed black; border-radius: 50%; padding: 10px; width: fit-content; margin: 10px auto;"> Multiples of 8 and 6 are 8, 16, <u>24</u> 6, 12, 18, <u>24</u> </div>	2. $\frac{2}{3}, \frac{4}{5}$ $\frac{\quad}{15}$ <div style="border: 1px dashed black; border-radius: 50%; padding: 10px; width: fit-content; margin: 10px auto;"> Multiples of 3 and 5 are 3, 6, 9, 12, <u>15</u> 5, 10, <u>15</u> </div>	3. $\frac{3}{4}, \frac{7}{10}$
--	---	--------------------------------

- | | | |
|---------------------------------|----------------------------------|---------------------------------|
| 4. $\frac{1}{6}, \frac{4}{9}$ | 5. $\frac{5}{6}, \frac{3}{10}$ | 6. $\frac{1}{2}, \frac{3}{4}$ |
| 7. $\frac{5}{8}, \frac{1}{10}$ | 8. $\frac{1}{2}, \frac{2}{3}$ | 9. $\frac{1}{3}, \frac{5}{12}$ |
| 10. $\frac{3}{6}, \frac{9}{12}$ | 11. $\frac{3}{4}, \frac{5}{6}$ | 12. $\frac{7}{9}, \frac{7}{12}$ |
| 13. $\frac{1}{4}, \frac{6}{7}$ | 14. $\frac{5}{12}, \frac{7}{10}$ | 15. $\frac{5}{6}, \frac{5}{8}$ |

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Comparing Fractions

Use $>$, $<$, or $=$ to make true statements.

1. $\frac{5}{6} \underline{\quad} \frac{3}{4}$ <div style="border: 1px dashed black; border-radius: 50%; padding: 10px; width: fit-content; margin: 10px auto;"> $\frac{10}{12} > \frac{9}{12}$ </div>	2. $\frac{1}{4} \underline{\quad} \frac{1}{3}$ <div style="border: 1px dashed black; border-radius: 50%; padding: 10px; width: fit-content; margin: 10px auto;"> $\frac{3}{12}$ </div>	3. $\frac{2}{3} \underline{\quad} \frac{7}{8}$	4. $\frac{1}{6} \underline{\quad} \frac{3}{8}$
---	--	--	--

- | | | | |
|--|--|---|--|
| 5. $\frac{2}{3} \underline{\quad} \frac{4}{7}$ | 6. $\frac{9}{12} \underline{\quad} \frac{6}{8}$ | 7. $\frac{2}{5} \underline{\quad} \frac{3}{8}$ | 8. $\frac{5}{6} \underline{\quad} \frac{7}{8}$ |
| 9. $\frac{5}{8} \underline{\quad} \frac{7}{10}$ | 10. $\frac{5}{6} \underline{\quad} \frac{6}{7}$ | 11. $\frac{3}{8} \underline{\quad} \frac{5}{12}$ | 12. $\frac{4}{7} \underline{\quad} \frac{3}{5}$ |
| 13. $\frac{7}{10} \underline{\quad} \frac{7}{12}$ | 14. $\frac{3}{4} \underline{\quad} \frac{6}{8}$ | 15. $\frac{2}{7} \underline{\quad} \frac{1}{4}$ | 16. $\frac{7}{12} \underline{\quad} \frac{5}{8}$ |
| 17. $6\frac{5}{9} \underline{\quad} 6\frac{7}{12}$ | 18. $3\frac{7}{10} \underline{\quad} 3\frac{3}{4}$ | 19. $2\frac{4}{5} \underline{\quad} 2\frac{7}{9}$ | 20. $8\frac{2}{3} \underline{\quad} 8\frac{8}{12}$ |

Practice

Perform the indicated operation.

1.
$$\begin{array}{r} 6014 \\ - 783 \\ \hline \end{array}$$

2.
$$\begin{array}{r} \$42.78 \\ \times 3 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 2614 \\ + 5320 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 739 \\ \times 28 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 32 \overline{)12\,634} \end{array}$$

6.
$$\begin{array}{r} 5.9 \\ \times 3.4 \\ \hline \end{array}$$

7.
$$\begin{array}{r} \$2784 \\ 361 \\ + 4029 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 4 \overline{)1.728} \end{array}$$

9.
$$\begin{array}{r} 5.38 \\ \times 0.27 \\ \hline \end{array}$$

10.
$$\begin{array}{r} \$16.83 \\ - 7.95 \\ \hline \end{array}$$

11. 0.13×0.2

12. $\$487 \times 6$

13. $15.813 - 1.4$

14. $289.8 \div 23$

15. $(286 - 143) \times 27$

16. $1.714 + 2.8 + 0.95$

Solve. Show your work.

17. To prepare for his radio show, Bruce times the different tapes. One runs 17 min, a second runs 9 min, and a third and fourth run 6 min each. What is the total time for the four tapes?

18. In the cheese factory warehouse, there are 4750 large wheels of cheese. Each wheel has a mass of 3.8 kg. What is the total mass of the cheese in the warehouse?

19. Claudette heated the mixture in her laboratory to 78.5°C . Then she allowed it to cool 16.9°C . At what temperature was it then?

20. The truck is loaded with 32 wooden crates of equal mass. The mass of the load is 48 t. How heavy is each crate?

21. The restaurant paid \$17.28 for 8 dozen doughnuts. What was its cost per doughnut?

22. The big jet flies 890 km each hour. On a 3.5 h trip, how many kilometres will it fly?

Adding and Subtracting Fractions with Like Denominators

Perform the indicated operation.

$$\begin{array}{r} 1. \quad 7\frac{3}{5} \\ + 2\frac{1}{5} \\ \hline 9\frac{4}{5} \end{array}$$

$$\begin{array}{r} 2. \quad 3\frac{4}{7} \\ - 2\frac{1}{7} \\ \hline 1\frac{3}{7} \end{array}$$

$$\begin{array}{r} 3. \quad 2\frac{1}{8} \\ + 3\frac{4}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 9\frac{7}{10} \\ - 6\frac{3}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 5\frac{7}{10} \\ + 9\frac{2}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad \frac{3}{4} \\ - \frac{2}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad \frac{3}{6} \\ + \frac{2}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 9\frac{1}{3} \\ + 2 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 3\frac{2}{5} \\ - 2\frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 6\frac{4}{9} \\ + 4\frac{4}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad \frac{7}{8} \\ - \frac{2}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 7\frac{4}{9} \\ - 2 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 12\frac{9}{10} \\ - 5\frac{6}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 1\frac{5}{8} \\ + 3\frac{2}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 11\frac{5}{9} \\ - 2\frac{3}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 3\frac{2}{5} \\ + 6\frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 7 \\ + 3\frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 5\frac{5}{6} \\ - 1\frac{1}{6} \\ \hline \end{array}$$

Practice

Solve. Show your work.

1. Ellie is designing a patchwork quilt. It will have 13 rows. Each row will have 9 squares. How many squares will there be in the quilt?

2. Ellie will have 85 of the squares for the quilt made by others. She will pay \$0.35 per square for each of these. How much will this cost?

3. Ellie estimates it will take 5 min per square to stitch together the 117 squares in her quilt. How long will this be in hours and minutes?

4. Last year Ellie made \$485 selling quilts, \$650 doing dressmaking, and \$235 as a mother's helper. What was her total income last year?

5. Julius was paid \$26.95 for 7 h of work. How much did he earn for each hour?

6. Jimmy's height is 2.4 cm greater than the last time he was measured. Jimmy is 80.1 cm tall. How tall was he before?

Adding Fractions with Unlike Denominators

Add. Show each sum in lowest terms.

1. $\frac{1}{4} + \frac{3}{12}$ $\frac{1}{3} + \frac{4}{12}$ $\frac{7}{12}$	2. $\frac{1}{6} + \frac{1}{6}$ $\frac{1}{3} + \frac{2}{6}$	3. $\frac{1}{4} + \frac{1}{2}$	4. $\frac{5}{12} + \frac{1}{4}$
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5. $\frac{2}{3} + \frac{1}{6}$

6. $\frac{3}{10} + \frac{1}{2}$

7. $\frac{3}{8} + \frac{1}{4}$

8. $\frac{1}{6} + \frac{4}{9}$

9. $\frac{1}{6} + \frac{3}{8}$

10. $\frac{1}{2} + \frac{2}{5}$

11. $\frac{3}{4} + \frac{1}{8}$

12. $\frac{3}{4} + \frac{1}{12}$

13. $\frac{3}{8} + \frac{5}{12}$

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Adding Fractions, Regrouping

Add. Regroup the sum if it shows an improper fraction.

1. $2\frac{3}{4} + 2\frac{6}{8}$ $1\frac{3}{8} + 1\frac{3}{8}$ $3\frac{9}{8} = 4\frac{1}{8}$	2. $4\frac{1}{3} + 4\frac{2}{6}$ $2\frac{5}{6} + 2\frac{5}{6}$	3. $5\frac{5}{6} + 2\frac{5}{8}$	4. $3\frac{7}{10} + 7\frac{7}{10}$
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5. $1\frac{2}{3} + 6\frac{5}{6}$

6. $3\frac{8}{9} + 5\frac{1}{6}$

7. $\frac{1}{2} + \frac{2}{3}$

8. $3\frac{3}{4} + 3\frac{3}{4}$

9. $2\frac{3}{8} + 4\frac{7}{12}$

10. $\frac{2}{3} + \frac{3}{4}$

11. $3\frac{4}{5} + 5\frac{7}{10}$

12. $1\frac{1}{2} + 7\frac{3}{4}$

13. $3\frac{5}{6} + 1\frac{1}{2}$

Subtracting Fractions with Unlike Denominators

Subtract. Show each difference in lowest terms.

1. $\begin{array}{r} \frac{2}{3} - \frac{4}{6} \\ \frac{1}{6} - \frac{1}{6} \\ \hline \frac{3}{6} = \frac{1}{2} \end{array}$	2. $\begin{array}{r} \frac{7}{9} - \frac{7}{9} \\ \frac{2}{3} - \frac{6}{9} \\ \hline \end{array}$	3. $\begin{array}{r} \frac{3}{5} \\ \frac{3}{10} \\ \hline \end{array}$	4. $\frac{1}{3} - \frac{1}{12}$
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5.
$$\begin{array}{r} \frac{3}{4} \\ \frac{7}{12} \\ \hline \end{array}$$

6.
$$\begin{array}{r} \frac{5}{9} \\ \frac{1}{3} \\ \hline \end{array}$$

7.
$$\begin{array}{r} \frac{5}{6} \\ \frac{1}{2} \\ \hline \end{array}$$

8.
$$\begin{array}{r} \frac{2}{3} \\ \frac{1}{4} \\ \hline \end{array}$$

9.
$$\begin{array}{r} \frac{3}{4} \\ \frac{1}{2} \\ \hline \end{array}$$

10.
$$\frac{3}{8} - \frac{1}{6}$$

11.
$$\frac{3}{4} - \frac{1}{2}$$

12.
$$\frac{7}{9} - \frac{1}{6}$$

13.
$$\frac{1}{2} - \frac{1}{6}$$

Subtracting Fractions, Regrouping

Subtract. Add to check.

1. $\begin{array}{r} 6\frac{1}{2} - 6\frac{2}{4} \\ 3\frac{3}{4} - 3\frac{3}{4} \\ \hline 2\frac{3}{4} \end{array}$	2. $\begin{array}{r} 4 - 3\frac{3}{3} \\ 2\frac{1}{3} - 2\frac{1}{3} \\ \hline \end{array}$	3. $\begin{array}{r} 7\frac{1}{3} \\ 5\frac{1}{6} \\ \hline \end{array}$	4. $2\frac{1}{2} - \frac{2}{3}$
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5.
$$\begin{array}{r} 8\frac{1}{6} \\ 4\frac{2}{3} \\ \hline \end{array}$$

6.
$$\begin{array}{r} 9 \\ 4\frac{2}{5} \\ \hline \end{array}$$

7.
$$\begin{array}{r} 2\frac{4}{9} \\ \frac{7}{9} \\ \hline \end{array}$$

8.
$$\begin{array}{r} 6\frac{1}{2} \\ 5\frac{5}{6} \\ \hline \end{array}$$

9.
$$3\frac{1}{4} - 1\frac{3}{4}$$

10.
$$5\frac{5}{6} - 4\frac{7}{8}$$

11.
$$10\frac{3}{8} - 3\frac{11}{12}$$

12.
$$1\frac{1}{4} - \frac{5}{8}$$

Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \quad 6\frac{1}{9} \\ + 3\frac{4}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 3.6 \\ \times 2.9 \\ \hline \end{array}$$

$$3. \quad 12 \overline{)14820}$$

$$\begin{array}{r} 4. \quad 7\frac{3}{4} \\ + 1\frac{1}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 2486 \\ - 979 \\ \hline \end{array}$$

$$6. \quad 7 \overline{)959}$$

$$\begin{array}{r} 7. \quad 2.3 \\ 0.416 \\ + 7.92 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad \$42.83 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 8\frac{3}{10} \\ - 2\frac{4}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 406 \\ \times 23 \\ \hline \end{array}$$

$$11. \quad 8403 - 297 \quad 12. \quad \$16.34 + \$0.87 + \$2.50 \quad 13. \quad 4.28 \times 5.3$$

Solve. Show your work.

14. The Parthenon in Athens has a rectangular base about 69.5 m long and about 30.8 m wide. What is its area?

16. A certain size container holds 250 kg of grain. How many such containers would be needed to hold 12 460 kg ?

18. A pheasant breeding project raised 1775 young birds this year, 2020 last year, and 1960 the year before that. How many have been raised in the past three years?

15. In the pasteurization process, milk is kept at about 62°C for 30 min, then chilled quickly to 10°C. By how many degrees is it cooled in this process?

17. An oil company agrees to sell the filling station 3000 cans of oil at \$0.82 per can. How much will this cost the station?

19. There were 8 boxes of pectin in the kitchen. The chef used $2\frac{1}{3}$ boxes in making jelly. How many boxes are left?

Multiplying Fractions

Multiply. Show each product in lowest terms.

1. $\frac{2}{3} \times \frac{1}{2} = \frac{2 \times 1}{3 \times 2}$ $= \frac{2}{6} \text{ or } \frac{1}{3}$	2. $\frac{2}{5} \times \frac{3}{4} = \frac{2 \times 3}{5 \times 4}$	3. $\frac{3}{4} \times \frac{4}{7}$	4. $\frac{2}{3} \times \frac{3}{8}$
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5. $\frac{1}{3} \times \frac{3}{5}$

6. $\frac{1}{2} \times \frac{3}{4}$

7. $\frac{2}{3} \times \frac{5}{6}$

8. $\frac{2}{5} \times \frac{3}{5}$

9. $\frac{7}{10} \times \frac{1}{2}$

10. $\frac{4}{5} \times \frac{5}{8}$

11. $\frac{5}{6} \times \frac{3}{10}$

12. $\frac{1}{2} \times \frac{1}{2}$

13. $\frac{3}{5} \times \frac{5}{9}$

14. $\frac{1}{4} \times \frac{4}{5}$

15. $\frac{4}{7} \times \frac{3}{8}$

16. $\frac{3}{4} \times \frac{5}{6}$

Multiplying Fractions and Whole Numbers

Multiply.

1. $14 \times \frac{2}{7} = \frac{14}{1} \times \frac{2}{7}$ $= \frac{28}{7} \text{ or } 4$	2. $\frac{1}{3} \times 16 = \frac{1}{3} \times \frac{16}{1}$	3. $12 \times \frac{2}{3}$	4. $9 \times \frac{1}{2}$
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5. $4 \times \frac{2}{3}$

6. $\frac{4}{9} \times 24$

7. $32 \times \frac{5}{8}$

8. $\frac{7}{12} \times 9$

9. $8 \times \frac{3}{5}$

10. $\frac{5}{6} \times 18$

11. $\frac{2}{5} \times 13$

12. $\frac{1}{10} \times 12$

13. $10 \times \frac{4}{5}$

14. $\frac{7}{10} \times 10$

15. $24 \times \frac{3}{4}$

16. $\frac{6}{7} \times 21$

Reciprocals

Find the reciprocal for each.

1. $\frac{3}{4} \frac{4}{3}$ or $1\frac{1}{3}$

2. $1\frac{4}{5}$

3. $\frac{3}{10}$

4. $2\frac{1}{6}$

5. 9

$1\frac{4}{5} = \frac{9}{5}$

Complete.

6. $\frac{2}{3} \times \frac{3}{2} = 1$

7. $2\frac{1}{2} \times \underline{\quad} = 1$

8. $\frac{4}{5} \times \underline{\quad} = 1$

9. $7 \times \underline{\quad} = 1$

Find the reciprocal for each.

10. $\frac{3}{5}$

11. $2\frac{2}{3}$

12. $\frac{2}{7}$

13. 6

14. $5\frac{1}{4}$

15. $\frac{5}{9}$

16. $\frac{1}{10}$

17. 12

18. $4\frac{1}{2}$

19. $\frac{3}{8}$

Complete.

20. $\frac{5}{6} \times \underline{\quad} = 1$

21. $4 \times \underline{\quad} = 1$

22. $3\frac{5}{8} \times \underline{\quad} = 1$

23. $7\frac{3}{4} \times \underline{\quad} = 1$

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Dividing Fractions

Divide. Show each quotient in lowest terms.

1. $\frac{2}{3} \div \frac{2}{9} = \frac{2}{3} \times \frac{9}{2}$
 $= \frac{18}{6}$ or 3

2. $\frac{1}{2} \div 3 = \frac{1}{2} \times \frac{1}{3}$

3. $6 \div \frac{3}{4}$

4. $\frac{3}{5} \div \frac{3}{8}$

5. $\frac{3}{4} \div \frac{2}{5}$

6. $2 \div \frac{2}{7}$

7. $\frac{2}{3} \div \frac{1}{4}$

8. $\frac{7}{8} \div \frac{5}{8}$

9. $5 \div \frac{1}{5}$

10. $\frac{3}{10} \div \frac{1}{3}$

11. $\frac{1}{2} \div 4$

12. $\frac{5}{6} \div \frac{3}{5}$

13. $\frac{5}{8} \div \frac{3}{4}$

14. $12 \div \frac{5}{6}$

15. $9 \div \frac{1}{2}$

16. $\frac{2}{3} \div 8$

Changing Fractions to Decimals

Divide the numerator by the denominator to change each fraction to a decimal. Round the quotient to two decimal places.

$1. \frac{3}{7}$ $\begin{array}{r} 0.428 \rightarrow 0.43 \\ 7 \overline{) 3.000} \\ \underline{28} \\ 20 \\ \underline{14} \\ 60 \\ \underline{56} \\ 0 \end{array}$	$2. \frac{14}{9}$ $\begin{array}{r} 1. \\ 9 \overline{) 14.0} \\ \underline{9} \\ 50 \end{array}$	$3. \frac{1}{6}$	$4. \frac{23}{3}$
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$5. \frac{1}{9}$

$6. \frac{11}{6}$

$7. \frac{5}{8}$

$8. \frac{7}{12}$

Fractions and Their Equivalent Decimals

Perform the indicated operation using fractions. Then perform the operation using decimals.

$1. \quad \begin{array}{r} 2\frac{1}{4} \\ + 1\frac{1}{2} \\ \hline \end{array}$ $2. \quad \begin{array}{r} 2\frac{1}{4} \\ 1\frac{2}{4} \\ \hline 3\frac{3}{4} \end{array}$ $2.25 + 1.5 = 3.75$	$2. \quad \begin{array}{r} 4\frac{1}{2} \\ - 3\frac{1}{5} \\ \hline \end{array}$ $4 \frac{5}{10} - 3 \frac{2}{10} = 1 \frac{3}{10} = 1.3$	$3. \quad \begin{array}{r} 3\frac{1}{8} \\ - 2\frac{1}{2} \\ \hline \end{array}$ $3\frac{1}{8} - 2\frac{4}{8} = 2\frac{5}{8} = 2.625$
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$4. \quad \begin{array}{r} 1\frac{3}{4} \\ + 3\frac{5}{8} \\ \hline \end{array}$

$5. \quad \begin{array}{r} 2\frac{5}{6} \\ + 3\frac{2}{3} \\ \hline \end{array}$

$6. \quad \begin{array}{r} 12\frac{1}{9} \\ - 3\frac{2}{3} \\ \hline \end{array}$

$7. \frac{1}{2} \times \frac{1}{2}$

$8. \frac{3}{4} \div 2$

$9. \frac{3}{4} \times \frac{2}{3}$

$10. \frac{8}{9} \div 4$

Practice

Perform the indicated operation.

1.
$$\begin{array}{r} 2\frac{1}{4} \\ + 1\frac{5}{6} \\ \hline \end{array}$$

2.
$$\begin{array}{r} 2\frac{1}{3} \\ - \frac{3}{4} \\ \hline \end{array}$$

3.
$$\begin{array}{r} 5.7 \\ \times 2.4 \\ \hline \end{array}$$

4.
$$7 \overline{)8016}$$

5.
$$\begin{array}{r} 2071 \\ - 865 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 57\,039 \\ 6\,481 \\ + 7\,212 \\ \hline \end{array}$$

7. $3\frac{1}{4} \times \frac{2}{3}$

8. $\frac{3}{4} \div \frac{1}{8}$

9.
$$\begin{array}{r} 7.03 \\ 0.219 \\ + 6.7 \\ \hline \end{array}$$

10.
$$\begin{array}{r} \$16.37 \\ \times 8 \\ \hline \end{array}$$

11. $4\frac{1}{6} - 1\frac{1}{2}$

12. $8 \div \frac{4}{5}$

13. $\frac{1}{3} + 1\frac{1}{2} + 2\frac{3}{4}$

14. $3812 \div 31$

15. $\$17.11 + \$8.05 + \$0.93$

16. 60×117

Solve. Show your work.

17. Ruth began painting with $2\frac{1}{4}$ cans of paint. She had $1\frac{3}{4}$ cans of paint when she finished. How many cans of paint did she use?

18. The trip lasts 10 d. John's father told him that they would spend about $\frac{1}{3}$ of it driving. How many days can John expect to be riding in the car?

19. The camp theater charges \$0.35 for children. One night there were 52 children in the theater. How much did the children pay in all?

20. When the 3 boys got to the amusement park their mother gave them \$6.75 to share. How much did each one get?

21. Each car of the amusement park train holds 12 children. There are 6 cars. The train makes 20 trips each day. How many children can it carry in a day?

22. Sara puts scraps of silver into the crucible to melt. The masses of the scraps are 42.3 g, 57.9 g, and 28.8 g. In all, how many grams does she have?

Writing Ratios

Write each ratio in three different ways.

1. apples to pears	2 to 5, $2:5$, $\frac{2}{5}$
2. apples to bananas	
3. apples to all the fruit	



- | | |
|------------------------|------------------------------|
| 4. cherries to apples | 5. pears to bananas |
| 6. bananas to apples | 7. cherries to pears |
| 8. bananas to cherries | 9. cherries to all the fruit |

Finding Equivalent Ratios

Write three ratios equivalent to each.

1. $\frac{1}{5}$, $\frac{2}{10}$, $\frac{3}{15}$, $\frac{4}{20}$	2. $\frac{2}{7}$	3. 5:8
$\frac{1 \times 2}{5 \times 2}$, $\frac{1 \times 3}{5 \times 3}$, $\frac{1 \times 4}{5 \times 4}$	$\frac{2 \times 2}{7 \times 2}$	

Write each in simplest form.

4. $\frac{40}{45} = \frac{8}{9}$	5. $\frac{9}{27}$	6. 24:64	7. $\frac{48}{56}$
$\div 5$	$\div 9$		
$\div 5$	$\div 9$		

Write three ratios equivalent to each.

8. $\frac{5}{6}$	9. $\frac{4}{5}$	10. $\frac{2}{3}$
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Write each in simplest form.

11. $\frac{18}{81}$	12. $\frac{45}{60}$	13. $\frac{42}{60}$	14. $\frac{7}{28}$
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Finding the Missing Term

Find the missing value that makes the ratios equivalent.

1. $\frac{3}{7} = \frac{18}{42}$ <div style="text-align: center;"> $\times 6$ $\times 6$ </div>	2. $\frac{20}{36} = \frac{\quad}{9}$ <div style="text-align: center;"> $\div 4$ $\div 4$ </div>	3. $\frac{2}{3} = \frac{14}{\quad}$	4. $\frac{35}{10} = \frac{\quad}{2}$
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- | | | | |
|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| 5. $\frac{1}{8} = \frac{9}{\quad}$ | 6. $\frac{6}{8} = \frac{\quad}{4}$ | 7. $\frac{5}{7} = \frac{40}{\quad}$ | 8. $\frac{8}{3} = \frac{32}{\quad}$ |
| 9. $\frac{21}{30} = \frac{\quad}{10}$ | 10. $\frac{5}{1} = \frac{\quad}{11}$ | 11. $\frac{72}{45} = \frac{\quad}{5}$ | 12. $\frac{30}{15} = \frac{2}{\quad}$ |
| 13. $\frac{5}{6} = \frac{35}{\quad}$ | 14. $\frac{27}{12} = \frac{\quad}{4}$ | 15. $\frac{56}{64} = \frac{\quad}{8}$ | 16. $\frac{5}{9} = \frac{45}{\quad}$ |

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Finding the Missing Term Using Cross Products

Use cross products to find the missing term.

1. $\frac{15}{5} = \frac{9}{3}$ $5 \times ? = 15 \times 3$ $5 \times \textcircled{9} = 45$	2. $\frac{6}{14} = \frac{\quad}{21}$ $14 \times ? = 6 \times 21$	3. $\frac{15}{3} = \frac{25}{\quad}$	4. $\frac{9}{24} = \frac{\quad}{32}$
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- | | | | |
|--|--|--|--|
| 5. $\frac{24}{9} = \frac{16}{\quad}$ | 6. $\frac{7}{14} = \frac{5}{\quad}$ | 7. $\frac{4}{8} = \frac{\quad}{14}$ | 8. $\frac{8}{2} = \frac{20}{\quad}$ |
| 9. $\frac{9}{30} = \frac{6}{\quad}$ | 10. $\frac{9}{36} = \frac{\quad}{16}$ | 11. $\frac{55}{33} = \frac{\quad}{6}$ | 12. $\frac{10}{12} = \frac{25}{\quad}$ |
| 13. $\frac{18}{24} = \frac{15}{\quad}$ | 14. $\frac{49}{35} = \frac{\quad}{20}$ | 15. $\frac{28}{63} = \frac{16}{\quad}$ | 16. $\frac{15}{6} = \frac{\quad}{10}$ |

Practice

Write ratios for each of these in two different ways.

1. 9 new cars,
5 used cars

2. win 7 of 10
races

3. trade 9 of 12
players

Write three ratios equivalent to each.

4. $\frac{3}{7}$

5. 7:2

6. $\frac{12}{3}$

Write in simplest form.

7. $\frac{25}{30}$

8. 16:2

9. 3:36

10. $\frac{84}{24}$

11. 56:35

12. $\frac{21}{30}$

13. $\frac{141}{47}$

14. $\frac{42}{56}$

Find the missing value that makes the ratios equivalent.

15. $\frac{44}{32} = \frac{\quad}{8}$

16. $\frac{9}{4} = \frac{63}{\quad}$

17. $\frac{4}{5} = \frac{\quad}{100}$

18. $\frac{6}{1} = \frac{\quad}{12}$

19. $\frac{85}{60} = \frac{17}{\quad}$

20. $\frac{8}{48} = \frac{1}{\quad}$

21. $\frac{25}{100} = \frac{\quad}{4}$

22. $\frac{8}{9} = \frac{40}{\quad}$

Use cross products to find the missing term.

23. $\frac{27}{36} = \frac{\quad}{8}$

24. $\frac{6}{10} = \frac{\quad}{15}$

25. $\frac{10}{16} = \frac{35}{\quad}$

26. $\frac{22}{10} = \frac{\quad}{15}$

27. $\frac{9}{24} = \frac{6}{\quad}$

28. $\frac{32}{6} = \frac{\quad}{15}$

29. $\frac{6}{14} = \frac{21}{\quad}$

30. $\frac{10}{12} = \frac{45}{\quad}$

Finding Unit Rates

Find the unit rate.

1. 120 m in 4 s 30 m/s $\frac{120}{4} = \frac{?}{1}$ $120 \times 1 = 4 \times \textcircled{30}$	2. 291 km in 3 h $\frac{291}{3} = \frac{?}{1}$	3. 45 mL in 20 s
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4. 840 m in 100 s

5. 9 L in 10 h

6. 12°C in 6 min

7. 2800 kg in 10 h

8. 15 g in 10 cm³

9. 8 L for 20m²

10. 6 kg in 48 L

11. 810 km in 6 h

12. 75 cm in 15 min

Practice

Solve. Show your work.

- The O'Malleys said that 3 out of every 10 people they met on their trip were from Ontario. They met 120 people on the trip. How many were from Ontario?
- Mr. Carter used $2\frac{1}{2}$ boxes of nails to fix the roof. He began work with $3\frac{1}{4}$ boxes. How many boxes did he have when he finished?
- It is 78 km by train from our village to the city. By bus, it is 93 km. How much shorter is it by train?
- A crew of three workers harvested 1323 bales of hay in the dry spell. What was the average number of bales per worker?
- The scientists in the balsa raft travelled $\frac{1}{4}$ of the trip before the first storm and $\frac{1}{3}$ of it before the second storm. What fraction of the trip remained at that point?
- Peter's father told him that for every dollar Peter gave to the Scholarship Fund, he would give \$1.50. Peter gave \$4.80. How much did his father have to give?

Unit Pricing

Find the unit price to the nearest cent.

1. 3 peaches for \$0.42 $\begin{array}{r} \$0.14 \\ 3 \overline{) \$0.42} \end{array}$ 1 peach costs 14¢	2. \$1.81 for 9 potatoes $9 \overline{) \$1.81}$	3. 3 L of milk for \$2.34
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4. \$1.12 for 6 pears

5. \$1.11 for 3 jars of mustard

6. \$1.95 for 15 tomatoes

7. 3 turnips for \$1.00

8. 4 L of motor oil for \$3.96

9. 24 cookies for \$6.70

Practice

Solve. Show your work.

- The school computer can print 32 characters each second. How many characters can it print in 15 s?
- The Hill School just bought a computer for \$995, a printer for \$795, and a disk drive for \$1195. How much was this altogether?
- Karen, Kim, and Ken took turns doing a typing job on the word processor. Karen did $\frac{1}{2}$ of the work, Kim $\frac{1}{5}$, and Ken $\frac{1}{10}$. How much of the job was left?
- Ted bought a can of paint that promised on the label to cover 40 m². He plans to paint both sides of a fence which is 9.375 m long and 1.6 m high. What portion of the can will this take?
- Electricity for the light on Jenny's desk costs about $\frac{6}{10}$ of a cent per hour. If Jenny leaves the light burning for 24 h, about how much will it cost?
- Peter estimates the jar holds 375 jelly beans. He hopes to open it and share it with 14 others in his class. How many would each person get?

Practice

Perform the indicated operation.

1.
$$\begin{array}{r} 2\frac{2}{7} \\ + 1\frac{3}{5} \\ \hline \end{array}$$

2. $4 \div \frac{2}{5}$

3.
$$\begin{array}{r} 2.07 \\ - 1.624 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 458 \\ \times 103 \\ \hline \end{array}$$

5. $9 \overline{)42\,063}$

6.
$$\begin{array}{r} 5\frac{7}{10} \\ - 2\frac{4}{5} \\ \hline \end{array}$$

7. $3\frac{1}{3} \times 1\frac{1}{6}$

8.
$$\begin{array}{r} 24\,039 \\ + 6\,475 \\ \hline \end{array}$$

9. $\frac{3}{7} \div 3$

10.
$$\begin{array}{r} 4.7 \\ \times 2.9 \\ \hline \end{array}$$

11. $5\frac{1}{3} + 2\frac{1}{4} + 6\frac{5}{12}$

12. $\frac{4}{9} \div \frac{2}{3}$

13. $3\frac{1}{5} \times \frac{10}{8}$

14. $6084 \div 14$

Solve. Show your work.

15. The girls challenged the boys to a reading contest. While the boys read 1157 pages, Alice read 326 pages, Betty read 354, and Claudette read 477. Who won the contest?

16. A team of 24 helpers will try to telephone all 1152 residents of the town to urge them to vote in the election. How many will each person have to call?

17. Mrs. Hill owes the telephone company \$85.59. She paid \$37.50 today and will pay \$16.25 next month. How much will she owe then?

18. How many square metres of cloth are needed to make a triangular flag which has a height of 1.8 m and a base of 2.5 m?

19. The directions tell Jep to remove half the liquid from the jar and then pour $\frac{4}{5}$ of what remains into a beaker. What fraction of one full jar would this be?

20. $2\frac{1}{2}$ bags of lawn food are in George's garage. He spreads the food from $1\frac{2}{3}$ bags onto the back lawn. How many bags of lawn food are left?

NAME _____

SPM6/U13/262-263

Writing Percents

Complete the chart.

1.	42 out of 100	42:100	$\frac{42}{100}$	0.42	42%
2.		9:100			
3.			$\frac{76}{100}$		
4.				0.55	
5.					3%
6.	24 out of 100				
7.		63:100			
8.			$\frac{12}{100}$		
9.				0.92	
10.					100%

SPM6/U13/264-265

Fractions and Decimals as Percents

Show each decimal as a percent.

1. 0.34 **34%**

2. 0.75

3. 0.06

4. 0.20

Show each fraction as a percent.

5. $\frac{3}{4}$ **75%**

$\frac{0.75}{4 \overline{)3.00}}$

6. $\frac{3}{10}$

$\frac{10 \overline{)3}}$

7. $\frac{3}{8}$

8. $\frac{6}{7}$

Show each decimal as a percent.

9. 0.08

10. 0.28

11. 0.83

12. 0.01

13. 0.55

14. 0.9

15. 0.62

16. 0.3

Show each fraction as a percent.

17. $\frac{6}{10}$

18. $\frac{3}{5}$

19. $\frac{4}{5}$

20. $\frac{5}{12}$

21. $\frac{4}{9}$

22. $\frac{5}{9}$

23. $\frac{2}{3}$

24. $\frac{1}{20}$

Percents as Decimals and Fractions

Write a decimal for each percent.

1. 55% 0.55

2. 30% 0.

3. 1%

4. 80%

Write a fraction with a denominator of 100 for each percent.

5. 20% $\frac{20}{100}$

6. 54% $\frac{\quad}{100}$

7. 25%

8. 48%

Write a decimal for each percent.

9. 72%

10. 8%

11. 45%

12. 60%

Write a fraction with a denominator of 100 for each percent.

13. 40%

14. 4%

15. 90%

16. 50%

17. 85%

18. 68%

19. 36%

20. 75%

21. Show each percent above as a fraction in lowest terms.
Use another sheet of paper if needed.

Finding a Percent of a Number

Find each of these.

1. 15% of 48

$$\begin{array}{r} 48 \\ 0.15 \\ \hline 240 \\ 480 \\ \hline 7.20 \end{array}$$

2. 20% of 195

$$\begin{array}{r} 195 \\ 0.20 \\ \hline \end{array}$$

3. 5% of 320

4. 50% of 94

5. 40% of 20

6. 72% of 625

7. 45% of 50

8. 67% of 180

9. 88% of 44

Interest

Find each of these.

1. 6% of \$1200 $\begin{array}{r} \$1200 \\ \underline{0.06} \\ \$72.00 \end{array}$	2. 14% of \$6000 $\begin{array}{r} \$6000 \\ \underline{0.14} \end{array}$	3. 10% of \$12 000
--	--	--------------------

4. 9% of \$6700

5. 15% of \$16 000

6. 8% of \$86

7. 12% of \$1725

8. 18% of \$3250

9. 24% of \$500

Solve.

10. You deposit \$25 in a bank.
In a year the bank will pay
6% of the \$25 in interest.
How much will the
interest be?

11. Mrs. Swoffo borrowed
\$5000. In one year she
must pay 18% of \$5000
in interest. How much
will the interest be?

Discount

Find the discount and sale price.

Price	Discount	Sale Price	Price	Discount	Sale Price
1. \$12.00 less 20%	$\begin{array}{r} \$12.00 \\ \underline{0.02} \\ \$2.4000 \end{array}$	$\begin{array}{r} \$12.00 \\ \underline{2.40} \\ \$9.60 \end{array}$	2. \$20 less 5%		

3. \$1800
less
25%

4. \$7.20
less
15%

5. \$9.50
less
10%

6. \$6.25
less
8%

Practice

Perform the indicated operation.

1.
$$\begin{array}{r} 6.481 \\ \times 3.7 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 2\frac{3}{8} \\ + 4\frac{7}{8} \\ \hline \end{array}$$

3.
$$28 \overline{)130.2}$$

4.
$$\begin{array}{r} \$263.04 \\ - 85.77 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 5.76 \\ + 6.8 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 14.3 \\ - 9.812 \\ \hline \end{array}$$

7.
$$\begin{array}{r} \$7.73 \\ 6.24 \\ + 9.05 \\ \hline \end{array}$$

8.
$$4 \overline{)8824}$$

9.
$$\begin{array}{r} 6.35 \\ \times 17 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 6 \\ - 3\frac{1}{5} \\ \hline \end{array}$$

11. 20% of 145

12. $6.3 + 12.14 + 9$

13. $5246 \div 43$

14. $172 - 14.61$

15. 6.3×0.81

16. $\$2773 + \$84 + \$906$

Solve. Show your work.

17. Which is the better buy, a box with 6 fruit bars for \$1.38 or a larger one with 16 fruit bars for \$3.84?

18. A magazine offers a one-year renewal for \$18.50 or a three-year renewal for \$45.75. How much less per year is the three-year price?

19. The populations of the three largest towns in this district are 12 064, 3 922, and 6 887. What is the total population of these towns?

20. 374 boys and girls arrive for the first day of school. They are divided into 17 groups of equal size for orientation. How many are in a group?

21. The Principal tells Mr. Potter's class that 25 percent of them have excellent marks. The class has 24 children. How many are getting these marks?

22. The school nurse told Shanya that she grew 2.7 cm this year. If Shanya grows that same amount for the next 5 years, how much taller will she be then?

Slides

Use tracing paper to test whether shape A is the slide image of shape B for the slide arrow shown.

1.

no
Slide arrow is too short!

2.

3.

4.

5.

6.

Use tracing paper to help you draw the slide image of the shape for the slide arrow shown.

7.

8.

Drawing a Slide Image Using a Rule

Draw the slide image of the shape for each rule.

1. (13R, 0D)

2. (7L, 6U)

3. (0L, 5U)

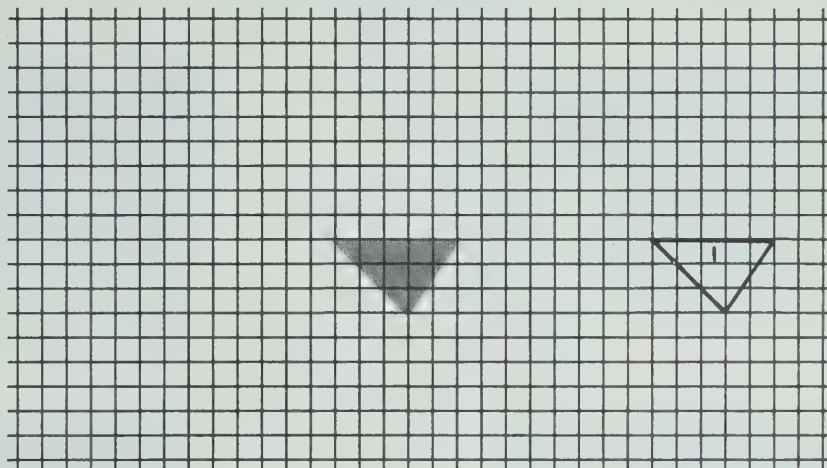
4. (1R, 2D)

5. (9L, 3U)

6. (13L, 4D)

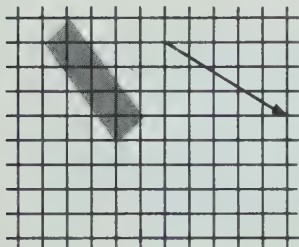
7. (11R, 9U)

8. (0R, 5D)

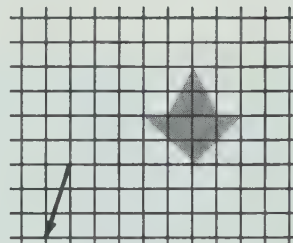


For each slide arrow, write the rule and draw the slide image.

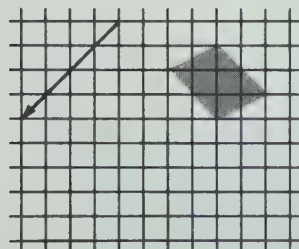
9.



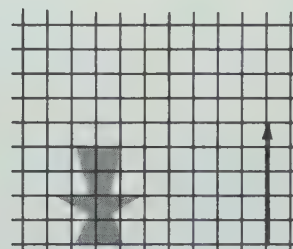
10.



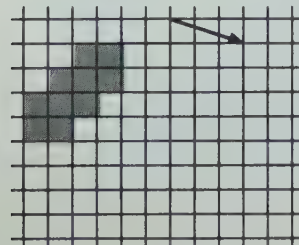
11.



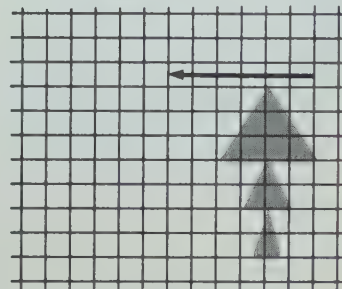
12.



13.

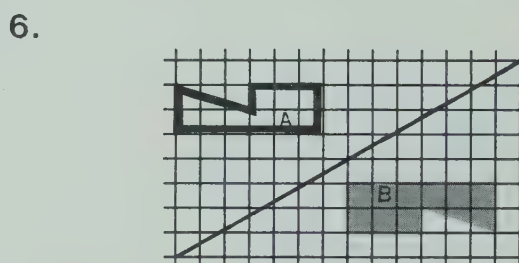
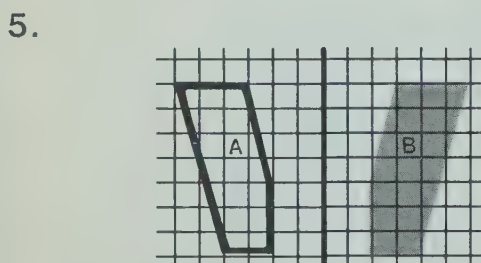
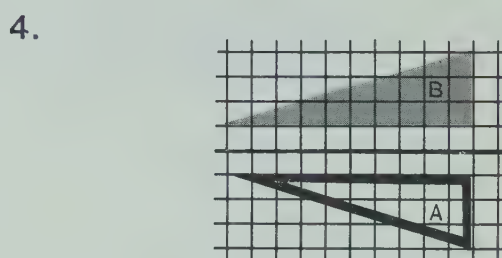
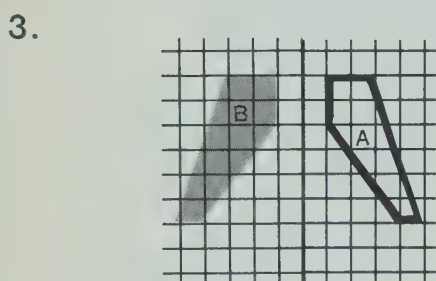
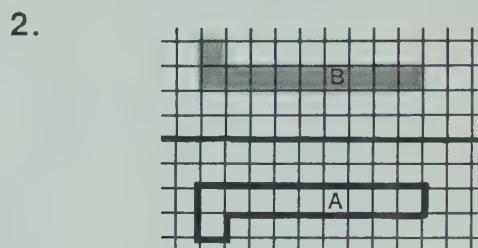
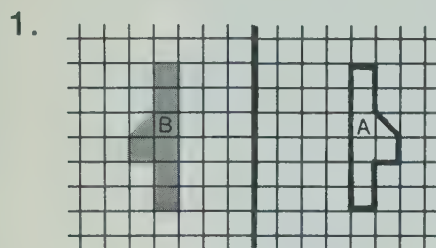


14.

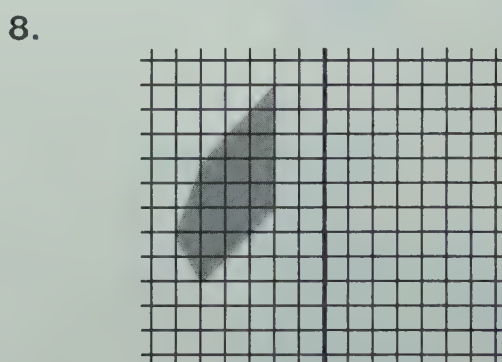
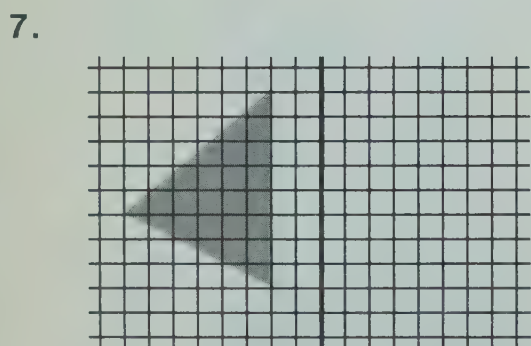


Flips

Use tracing paper to test whether shape A is the flip image of shape B for the flip line shown.



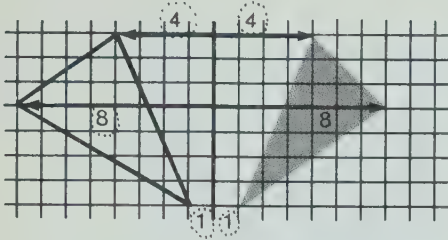
Use tracing paper to help you draw the flip image of the shape for the flip line shown.



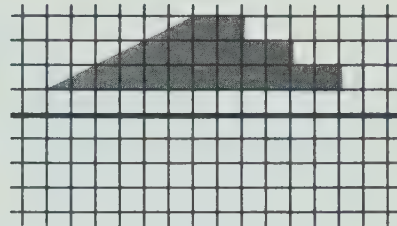
Drawing a Flip Image by Counting

Draw the flip image of the shape for each flip line shown.

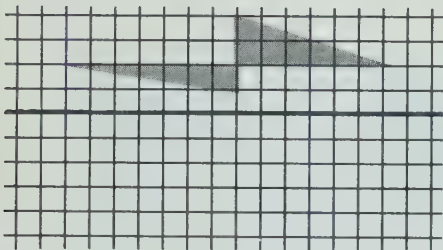
1.



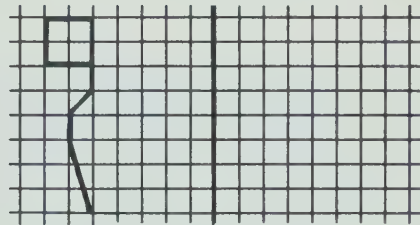
2.



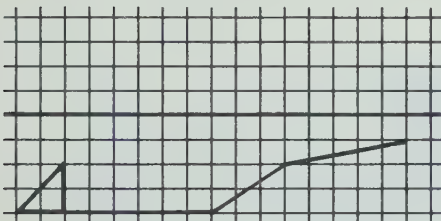
3.



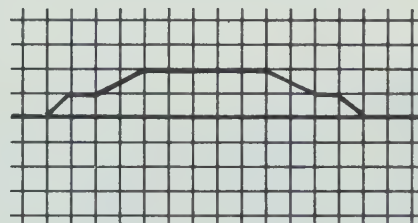
4.



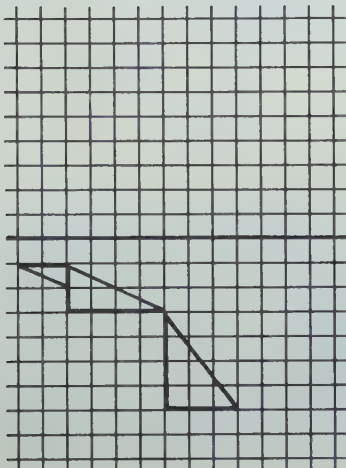
5.



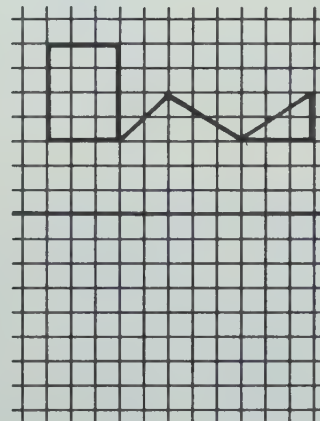
6.



7.



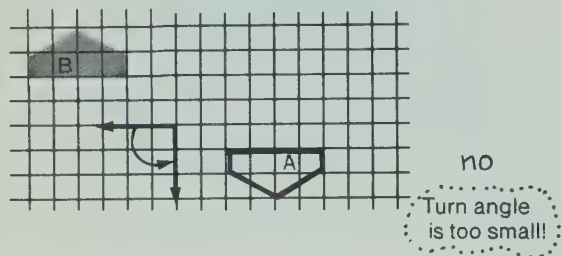
8.



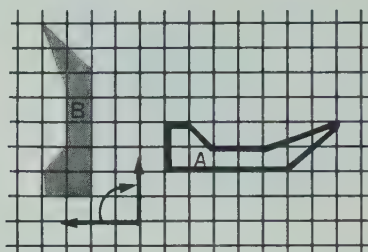
Turns

Use tracing paper to test whether shape A is the turn image of shape B for the turn angle shown.

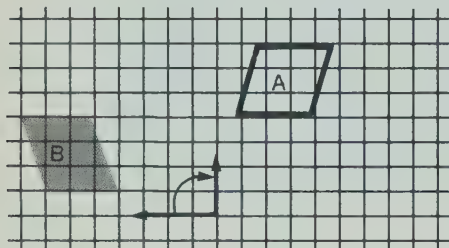
1.



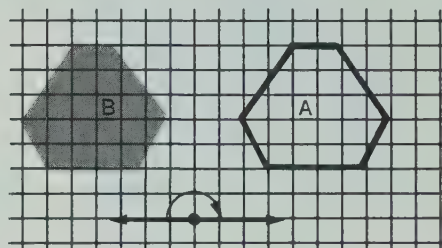
2.



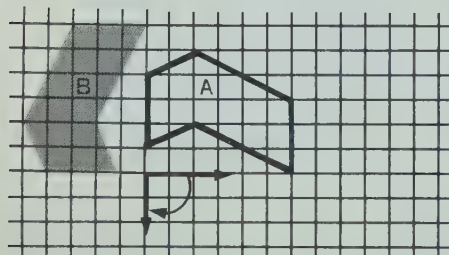
3.



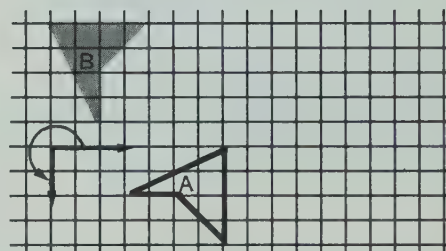
4.



5.

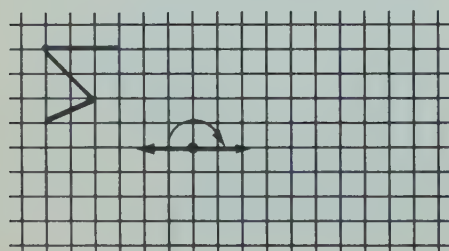


6.

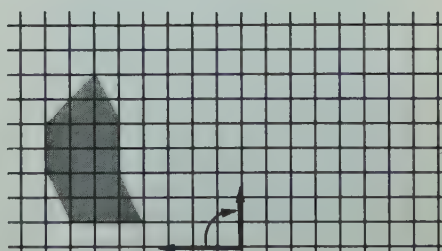


Use tracing paper to help draw the turn image of the shape for the turn angle shown.

7.



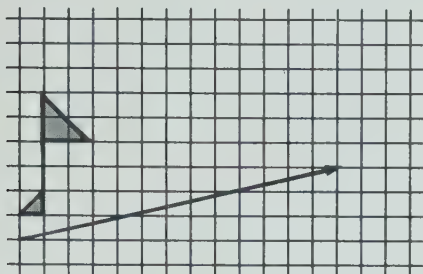
8.



Practice

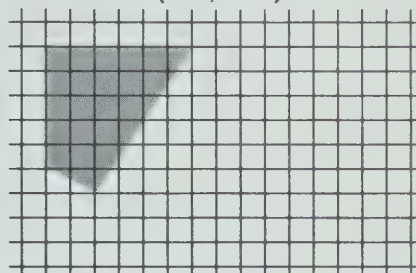
Use tracing paper. Draw the slide image for each rule or slide arrow.
Draw the flip image for each flip line. Draw the turn image for each turn angle.

1.



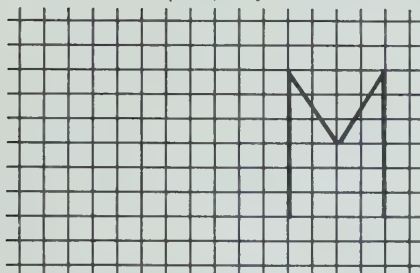
2.

(9R, 2D)

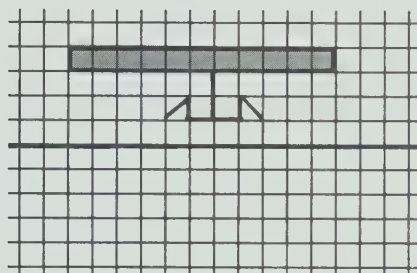


3.

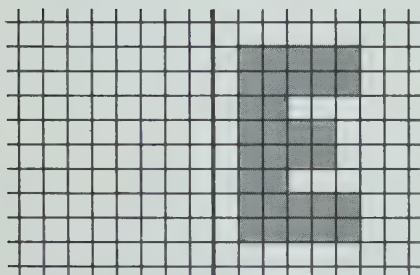
(7L, 0)



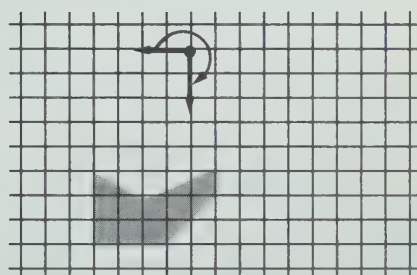
4.



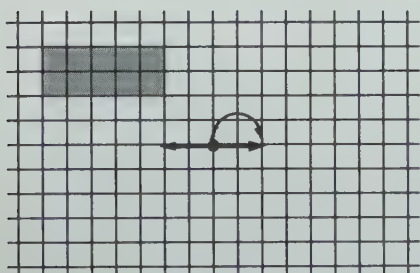
5.



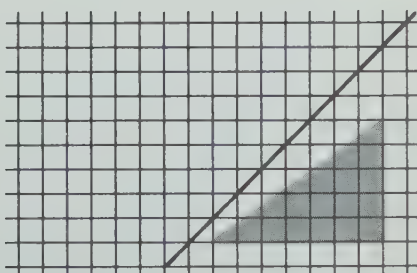
6.



7.


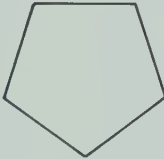

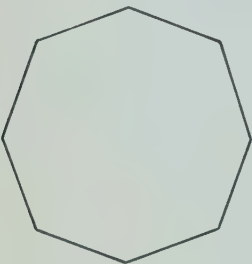




8.



Rotational Symmetry

Use tracing paper to test each shape for turn symmetry. Then, for those with turn symmetry, give the number of different turns less than a full turn for which the shape fits onto itself.

<p>1.</p>  <p>yes, 1</p>	<p>2.</p>  <p>yes, _____</p>	<p>3.</p> 
<p>4.</p> 	<p>5.</p> 	<p>6.</p> 

Tiling Patterns

Use these shapes. Sketch a pattern without spaces.

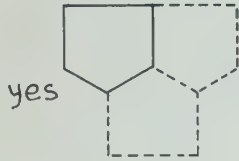


2. Try the exercises on pages 288-289 of your textbook again.

Tiling the Plane

Which of these shapes can be used to make tiling patterns that are tessellations? Sketch the tessellations. Use another piece of paper if necessary.

1.



2.



3.



4.



Practice

Solve.

1. Tickets to watch the college hockey game cost \$2.75 for students. Bob's coach treats his team. How much will 15 student tickets cost?
2. The coat Jean wants is on sale. It usually costs \$85 but a 15% discount is being given this month. How much will it cost?
3. Apples cost 15¢. Pears cost 18¢. Sam bought 2 apples for himself and an apple and a pear for each of his 5 friends. How much did he spend?
4. Frank's reading book has 185 pages. Each page contains about 35 lines. Each line contains about 8 words. About how many words are in the book?
5. Mr. Bartlet plans to wallpaper one wall of a room. The wall is 4.2 m long and 2.5 m high. A large window 2 m long and 1.5 m high is in the wall. How many square metres of paper will he need?
6. A Manitoba town has a population of 14 472 people. Assuming the same number were born in each month of the year, how many of the people were born in May?

Identifying Slide, Flip, and Turn Images in Tiling Patterns

For the tiling pattern shown, under what motion is

1. $\triangle ALR$ an image of $\triangle MBR$? turn

2. $\triangle MGA$ an image of $\triangle NHB$?

3. $\triangle MBC$ an image of $\triangle CNM$?

4. $\triangle ALM$ an image of $\triangle FLM$?

5. $\triangle MRL$ an image of $\triangle ARB$?

6. $\triangle LMA$ an image of $\triangle MNB$?

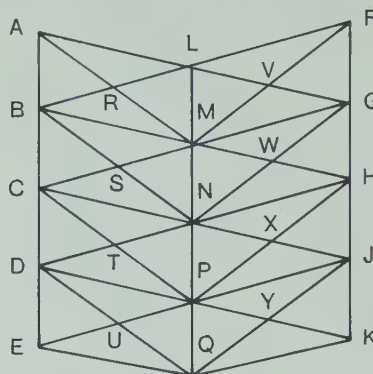
7. $\triangle AMG$ an image of $\triangle FMB$?

8. Name three triangles that are slide images of $\triangle GSN$.

9. Name two triangles that are turn images of $\triangle MRB$.

10. Name two triangles that have a S as a vertex. Name flip images of these triangles.

11. Name two other triangles that are flip images of each other. These triangles should have shapes different from the triangles named in Exercise 10.



Practice

Solve. Show your work.

- After fishing all morning, Udak has four fish. Their masses are 271 g, 305 g, 193 g, and 323 g. What is their average mass?
- By buying a lot of cans of tennis balls, the club gets a 30% discount. Without a discount, a can costs \$2.30. What does the club pay?
- The Barrows' holiday trip took them 780 km by air, 120 km by water, and 562 km by road. In all, how far did they go?
- Blasters removed 24 200 t of rock for the railroad. 20 t were put in each freight car to ship it away. How many freight cars were needed?
- The population of Mathville has gone from 7 320 in 1880 to 31 462 in 1980. How much growth is this?
- What is the perimeter of a rectangle with length 3.62 cm and width 1.8 cm?

Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \quad 7\frac{1}{3} \\ \quad 2\frac{1}{6} \\ + 3\frac{5}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 4.73 \\ \times 6.2 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \$14.03 \\ - 9.46 \\ \hline \end{array}$$

$$4. \quad 16 \overline{)72.32}$$

$$\begin{array}{r} 5. \quad 86\,041 \\ \quad 3\,972 \\ + 285 \\ \hline \end{array}$$

$$6. \quad 85\% \text{ of } 62$$

$$\begin{array}{r} 7. \quad 13 \\ - 4.27 \\ \hline \end{array}$$

$$8. \quad 134 \overline{)1000}$$

$$\begin{array}{r} 9. \quad 0.13 \\ \times 0.4 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad \$ 18.46 \\ + 723.32 \\ \hline \end{array}$$

$$11. \quad 30\% \text{ of } 841$$

$$12. \quad 1.296 \div 16$$

$$13. \quad 7.3 + 18.24 + 0.017$$

$$14. \quad 3.6 \times 18.7$$

$$15. \quad \$47.38 - \$6.54$$

$$16. \quad (873 - 256) \times 37$$

Solve. Show your work.

17. Stan gets 21 hits in 84 chances. In what percent of his chances does he get a hit?

18. What is the area of a triangular sail with a base of 6.4 m and a height of 8.2 m?

19. Molly buys 2 of the frames which cost \$7.95 each and 5 of the little ones for \$1.98 each. What is her total bill?

20. Mr. Morgan earns \$12 348, but pays \$2 840 in taxes. How much pay does he take home?

21. A scientist estimates that, on the average, 1 out of 25 birds of a certain species has been tagged by their team. If 225 of these birds are caught at random, about how many should have tags?

22. The circumference of the earth at the equator is about 40 000 km. The earth rotates through this distance in 24 h. Through how many kilometres at the equator does the earth rotate in 1 h?

Changing Place Values in Ratios

In both terms of the ratio, change the place values in the same way to get an equivalent ratio.

1. $\frac{1.88}{0.94} = \frac{188}{94}$ <small>(x 100) (x 100)</small>	2. $\frac{1.32}{7.2} = \frac{\quad}{72}$ <small>(x 10) (x 10)</small>	3. $\frac{5.5}{8.99} = \frac{\quad}{899}$
4. $\frac{6.5}{3.2} = \frac{\quad}{32}$	5. $\frac{2.823}{4.9} = \frac{\quad}{49}$	6. $\frac{9}{0.94} = \frac{\quad}{94}$
7. $\frac{7.82}{1.8} = \frac{\quad}{18}$	8. $\frac{6}{6.8} = \frac{\quad}{68}$	9. $\frac{0.08}{0.06} = \frac{\quad}{6}$
10. $\frac{63}{1.63} = \frac{\quad}{163}$	11. $\frac{3.655}{0.29} = \frac{\quad}{29}$	12. $\frac{27.2}{4.386} = \frac{\quad}{4386}$

SPM6/U15/300-301

Dividing by Numbers Less Than 1

Divide.

1. $0.8 \overline{)37.6}$ $\underline{32}$ 56 $\underline{56}$ 0	2. $0.7 \overline{)3.64}$ $\underline{49}$ 364	3. $0.9 \overline{)16.2}$	4. $0.4 \overline{)0.22}$
--	--	---------------------------	---------------------------

5. $0.9 \overline{)6.57}$	6. $0.3 \overline{)0.219}$	7. $0.7 \overline{)6.51}$	8. $0.6 \overline{)4.5}$
9. $0.2 \overline{)0.75}$	10. $0.4 \overline{)6.8}$	11. $0.5 \overline{)1.85}$	12. $0.8 \overline{)6.25}$

Dividing with Tenths

Divide.

1. $3.2 \overline{)36.80}$ $\underline{32}$ 48 $\underline{32}$ 160 $\underline{160}$ 0	2. $6.8 \overline{)44.2}$ $\underline{408}$	3. $1.2 \overline{)39.6}$	4. $3.8 \overline{)10.26}$
---	--	---------------------------	----------------------------

5. $5.2 \overline{)130}$

6. $2.2 \overline{)1.342}$

7. $4.4 \overline{)0.528}$

8. $9.8 \overline{)872.2}$

Rounding Quotients

Divide. Round the quotient to the nearest tenth.

1. $5.2 \overline{)17.280}$ $\underline{156}$ 168 $\underline{156}$ 120 $\underline{104}$ 16 $3.32 \rightarrow 3.3$	2. $4.6 \overline{)380}$ $\underline{368}$	3. $0.7 \overline{)29.1}$	4. $1.5 \overline{)4.6266}$
--	---	---------------------------	-----------------------------

5. $3.4 \overline{)1.262}$

6. $0.8 \overline{)2.396}$

7. $6.2 \overline{)78}$

8. $8.2 \overline{)0.104}$

9. Round each quotient above to the nearest hundredth.

10. Round each quotient above to the nearest thousandth.

Practice

In both terms of the ratio, change the place values in the same way to get an equivalent ratio.

1. $\frac{0.04}{0.37} = \frac{\quad}{37}$

2. $\frac{3}{6.4} = \frac{\quad}{64}$

3. $\frac{2.3}{0.004} = \frac{\quad}{4}$

Divide.

4. $0.8 \overline{)1.6}$

5. $0.9 \overline{)10.8}$

6. $0.5 \overline{)10.5}$

7. $0.4 \overline{)20}$

8. $0.6 \overline{)13.2}$

9. $0.2 \overline{)5}$

10. $2.4 \overline{)148.8}$

11. $4.8 \overline{)7.2}$

12. $3.6 \overline{)630}$

13. $1.7 \overline{)5.44}$

14. $4.9 \overline{)1.715}$

15. $3.6 \overline{)30.24}$

Divide. Round the quotient to the nearest tenth.

16. $3.4 \overline{)12.78}$

17. $1.8 \overline{)8.6}$

18. $6.2 \overline{)45.5}$

19. $0.8 \overline{)0.158}$

Divide. Round the quotient to the nearest hundredth.

20. $4.2 \overline{)16.6}$

21. $2.8 \overline{)642}$

22. $0.7 \overline{)0.72}$

23. $8.8 \overline{)78.18}$

Divide. Round the quotient to the nearest thousandth.

24. $5.8 \overline{)7.16}$

25. $9.1 \overline{)4.4}$

26. $7.3 \overline{)58}$

27. $1.9 \overline{)44.953}$

Dividing with Hundredths

Divide.

1. $6.38 \overline{)204.16}$ $\begin{array}{r} 32 \\ 6.38 \overline{)204.16} \\ \underline{1914} \\ 1276 \\ \underline{1276} \\ 0 \end{array}$	2. $0.74 \overline{)18.50}$ $\begin{array}{r} 2 \\ 0.74 \overline{)18.50} \\ \underline{148} \end{array}$	3. $2.09 \overline{)150.48}$	4. $4.68 \overline{)70.2}$
---	--	------------------------------	----------------------------

5. $0.07 \overline{)2.73}$

6. $1.76 \overline{)86.24}$

7. $0.25 \overline{)19.5}$

8. $7.95 \overline{)445.2}$

Dividing with Tenths, Hundredths, Thousandths

Divide.

1. $0.027 \overline{)0.1026}$ $\begin{array}{r} 3.8 \\ 0.027 \overline{)0.1026} \\ \underline{81} \\ 216 \\ \underline{216} \\ 0 \end{array}$	2. $2.79 \overline{)161.82}$ $\begin{array}{r} 5 \\ 2.79 \overline{)161.82} \\ \underline{1395} \end{array}$	3. $4.9 \overline{)12.936}$	4. $5.05 \overline{)37.37}$
--	---	-----------------------------	-----------------------------

5. $0.148 \overline{)9.62}$

6. $7.6 \overline{)72.2}$

7. $0.025 \overline{)14.3}$

8. $8.4 \overline{)35.7}$

Rounding Quotients

Divide. Round the quotient to the nearest tenth.

$1. \begin{array}{r} 1.27 \rightarrow 1.3 \\ 6.15 \overline{)7.8200} \\ \underline{615} \\ 1670 \\ \underline{1230} \\ 4400 \\ \underline{4305} \\ 95 \end{array}$	$2. \begin{array}{r} 0.348 \overline{)2.030} \end{array}$	$3. \begin{array}{r} 5.4 \overline{)15.9} \end{array}$	$4. \begin{array}{r} 0.6 \overline{)1.616} \end{array}$
---	---	--	---

$$5. \begin{array}{r} 0.54 \overline{)3.6} \end{array}$$

$$6. \begin{array}{r} 4.3 \overline{)15.27} \end{array}$$

$$7. \begin{array}{r} 0.66 \overline{)4.6} \end{array}$$

$$8. \begin{array}{r} 9.88 \overline{)5} \end{array}$$

9. Round each quotient above to the nearest hundredth.

10. Round each quotient above to the nearest thousandth.

Estimating Quotients

Estimate each quotient.

$1. \begin{array}{r} 0.76 \overline{)4.18} \rightarrow 8 \overline{)40}^5 \end{array}$	$2. \begin{array}{r} 1.9 \overline{)16.3} \rightarrow 2 \overline{) } \end{array}$	$3. \begin{array}{r} 42 \overline{)3196} \end{array}$
--	--	---

$$4. \begin{array}{r} 8.1 \overline{)39.2} \end{array}$$

$$5. \begin{array}{r} 3.6 \overline{)15.9} \end{array}$$

$$6. \begin{array}{r} 0.72 \overline{)5.5} \end{array}$$

$$7. \begin{array}{r} 0.058 \overline{)4.77} \end{array}$$

$$8. \begin{array}{r} 89 \overline{)3715} \end{array}$$

$$9. \begin{array}{r} 5.1 \overline{)19.2} \end{array}$$

$$10. \begin{array}{r} 0.288 \overline{)1.795} \end{array}$$

$$11. \begin{array}{r} 5.9 \overline{)2.38} \end{array}$$

$$12. \begin{array}{r} 67 \overline{)27.7} \end{array}$$

Practice

Perform the indicated operation.

$$\begin{array}{r} 1. \quad 27\,042 \\ \quad 9\,416 \\ + 8\,530 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 5\frac{1}{3} \\ - 2\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 4.65 \\ \times 0.88 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 4.3 \\ - 1.86 \\ \hline \end{array}$$

$$5. \quad 1.6 \overline{)29.28}$$

$$\begin{array}{r} 6. \quad \$47.36 \\ \times 28 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 47\,006 \\ - 9\,835 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad \$2781 \\ \quad 415 \\ + 6309 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 6\frac{1}{12} \\ \quad 5\frac{1}{4} \\ + 3\frac{3}{4} \\ \hline \end{array}$$

$$10. \quad 50 \overline{)47\,700}$$

$$11. \quad 2\frac{1}{2} \div 1\frac{7}{8}$$

$$12. \quad 3\frac{1}{5} \times \frac{5}{8}$$

$$13. \quad 25\% \text{ of } 92 \quad 14. \quad 0.15 \overline{)4.89}$$

$$15. \quad 0.73 + 2.92 + 5.501$$

$$16. \quad (6.3 - 4.02) \times 7.8$$

Solve. Show your work.

17. A packing crate with length 42 cm, width 35 cm, and height 20 cm can hold what volume of goods?

18. The butcher plans to sell 187.5 kg of beef in packages containing 0.75 kg each. How many packages will there be?

19. Monique is waiting until the dress she likes is on sale. The regular price is \$44.50. The sale discount is 18%. How much will she save?

20. The grocer sells fruit punch in 2.5 L bottles. They are filled from a tank holding 312.5 L. How many 2.5 L bottles can the grocer fill?

21. This year's wheat harvest at the Glencairn's farm was 11 428 kg. Last year the harvest was 5 709 kg. How much more was harvested this year?

22. The scientist is measuring the movement of a glacier. In 3 d, movements of 0.15 cm, 0.608 cm, and 1.03 cm are detected. What is the total distance?

Writing Integers

Ring the positive integers.

1. $-3, \textcircled{+5}, -2$ | 2. $+4, +25, 0$

Ring the negative integers.

3. $-7, 0, +3$ 4. $-38, +8, -1$

Write the opposite of each integer.

5. -5 $+5$ | 6. $+1$ 7. -10 8. $+15$

Ring the positive integers.

Ring the negative integers.

9. $+6, 0, -8$ 10. $+7, +102, -12$ 11. $-15, +2, -6$ 12. $0, +9, -9$

Write the opposite of each integer.

13. -4 14. $+10$ 15. $+57$ 16. -212

Comparing and Ordering Integers

Use $>$ or $<$ to make true statements.

1. $-4 < -1$ | 2. $+3 \underline{\hspace{1cm}} -2$ 3. $0 \underline{\hspace{1cm}} -3$ 4. $+4 \underline{\hspace{1cm}} +7$

List from least to greatest.

5. $-2, -6, +2, +1, +3, -4$
 $-6, -4, -2, +1, +2, +3$ | 6. $-2, 0, -8, +5, -1, +3$

Use $>$ or $<$ to make true statements.

7. $+6 \underline{\hspace{1cm}} +5$ 8. $-5 \underline{\hspace{1cm}} -3$ 9. $-2 \underline{\hspace{1cm}} +1$ 10. $+3 \underline{\hspace{1cm}} 0$
11. $-2 \underline{\hspace{1cm}} -7$ 12. $0 \underline{\hspace{1cm}} -6$ 13. $-8 \underline{\hspace{1cm}} -10$ 14. $+6 \underline{\hspace{1cm}} -6$

List from least to greatest.

15. $-5, -9, +4, 0, -2, +6$ 16. $-10, +3, -4, -1, +5, -6$

List from greatest to least.

17. $-9, +3, -6, +12, +2, -1$ 18. $+2, -4, +8, 0, -6, -7$

Adding Integers

Add.

1. $+5 + -8 -3$	2. $-6 + +8$	3. $-2 + -7$	4. $+3 + -2$
5. $-2 + +5$	6. $-7 + +2$	7. $+6 + -2$	8. $0 + -7$
9. $+6 + -6$	10. $+2 + +7$	11. $-7 + +3$	12. $-3 + -5$
13. $+4 + -3$	14. $-5 + -8$	15. $+3 + +6$	16. $-3 + +3$
17. $-9 + +1$	18. $+1 + -4$	19. $-8 + +9$	20. $-2 + 0$

Practice

Solve. Show your work.

- At the store Joanna picked up a bag with 16 bagels selling for \$1.36. Jesse found another with 12 bagels selling for \$1.00. Which had the better price?
- When all the ballots were counted, 7815 voted for the winner, 5044 for the other candidate, and 680 blank votes were cast. How many ballots were there in all?
- Dr. Jurgen bought 40 rolls of film for the office at \$2.85 per roll. What was the amount of this purchase?
- \$47.15 was collected. \$13.50 was given to one charity and \$22 to another. How much was left?
- The children picked berries. Phil filled $\frac{1}{3}$ of a box. Pat picked $\frac{1}{2}$ of a box. Eddy picked $1\frac{1}{4}$ boxes. How many boxes is this in all?
- Luanne went fishing 25 times last summer. She caught fish on 17 of the fishing trips. What percent of her trips were successful?

Finding Differences Between Temperatures

For each of these, tell how many degrees the temperature changed.
Then tell whether the temperature rose or fell.

1. $+10^{\circ}\text{C}$ to -2°C 12°C , fell	2. -4°C to $+7^{\circ}\text{C}$	3. -9°C to -4°C
4. $+11^{\circ}\text{C}$ to $+9^{\circ}\text{C}$	5. $+18^{\circ}\text{C}$ to -5°C	6. 0°C to -15°C
7. -9°C to $+15^{\circ}\text{C}$	8. $+22^{\circ}\text{C}$ to 0°C	9. -2°C to -5°C
10. $+8^{\circ}\text{C}$ to $+13^{\circ}\text{C}$	11. 0°C to $+8^{\circ}\text{C}$	12. $+7^{\circ}\text{C}$ to -9°C
13. -10°C to 0°C	14. -6°C to $+5^{\circ}\text{C}$	15. -12°C to -1°C

Practice

Solve. Show your work.

1. A pig with a mass of about 100 kg needs about 3.6 kg per day of feed. About 10% of this diet should be fats or oils. How many kilograms per day of fats or oils should a 100 kg pig get?
2. Fat has about 2.25 times the energy content of carbohydrates. A certain mass of carbohydrates produces 1500 kJ of energy. How many kilojoules would the same amount of fat produce?
3. For every kilogram of dry feed they eat, pigs consume about 3 kg of water. A pig drinking 6.3 kg of water is probably eating about how many kilograms of dry feed?
4. Lucienne is raising a pig as a school project. When she bought it, the mass of the piglet was 13.64 kg. Now, four months later, its mass is 113.5 kg. By how much has its mass increased?
5. Lucienne is looking over her feed bills for the project. In September she spent \$7.90, in October \$13.75, and in both November and December she spent \$16.40. What was her total feed bill?
6. When the pig project was finished, Lucienne had spent \$104.00 buying the piglet and its food. The butcher charged her \$35.00 to process it. She sold the meat for \$1.88/kg. There were 73 kg. How much did she gain or lose?

Practice

Perform the indicated operation.

1.
$$\begin{array}{r} 8015 \\ - 792 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 4.3 \\ 7.216 \\ + 0.84 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 5\frac{1}{2} \\ 3\frac{2}{5} \\ + 4\frac{3}{10} \\ \hline \end{array}$$

4.
$$73 \overline{)15\,622}$$

5.
$$\begin{array}{r} \$283 \\ \times 14 \\ \hline \end{array}$$

6.
$$1.2 \overline{)17.28}$$

7.
$$\begin{array}{r} 32\,107 \\ 4\,665 \\ + 989 \\ \hline \end{array}$$

8.
$$\begin{array}{r} \$17.05 \\ - 4.66 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 6\frac{1}{4} \\ - 2\frac{1}{2} \\ \hline \end{array}$$

10.
$$\begin{array}{r} 514 \\ \times 203 \\ \hline \end{array}$$

11. $3\frac{1}{3} \times \frac{3}{5}$

12. $\$245.41 \div 23$

13. $\frac{5}{9} \div \frac{1}{3}$

14. 15% of 65

Solve. Show your work.

15. At the book fair, the third grade bought 43 books. The fourth and fifth grades each bought 60 books. The sixth grade bought 74 books. How many books were bought by the four grades in all?

16. The sixth grade had a giant raffle for a scholarship fund. Expenses for prizes and tickets were \$188.25. The students sold 3422 tickets for 25¢ each. How much profit was made for the scholarship fund?

17. Another class of 42 children raised \$1134 for the fund. What was the average amount raised per child?

18. What is the area of a parallelogram whose base is 4.3 cm and whose height is 3.7 cm?

19. The Smithfields' trip covered 113 km by boat and 2405 km by car. The Bronsons travelled 780 km by air and 1640 km by train. How much farther did the Smithfields travel?

20. Marshall packaged 16 apples in each of 19 boxes and 6 apples in each of 35 trays. How many apples did he use?

NAME _____

Checking Up - - Computation

Perform the indicated operation. Show your work on another sheet of paper. Write your answers on this page.

1.
$$\begin{array}{r} 1784 \\ + 4513 \\ \hline \end{array}$$
2.
$$\begin{array}{r} 2868 \\ - 2376 \\ \hline \end{array}$$
3.
$$\begin{array}{r} 594 \\ \times 4 \\ \hline \end{array}$$
4.
$$\begin{array}{r} 6 \overline{)1428} \end{array}$$
5.
$$\begin{array}{r} 814 \\ \times 37 \\ \hline \end{array}$$
6.
$$\begin{array}{r} 28 \overline{)8596} \end{array}$$
7.
$$\begin{array}{r} 8330 \\ - 2592 \\ \hline \end{array}$$
8.
$$\begin{array}{r} 27.6 \\ \times 8 \\ \hline \end{array}$$
9.
$$\begin{array}{r} 259 \\ + 386 \\ \hline \end{array}$$
10.
$$\begin{array}{r} 137 \\ \times 206 \\ \hline \end{array}$$
11.
$$\begin{array}{r} 7 \overline{)58.8} \end{array}$$
12.
$$\begin{array}{r} \$13.68 \\ 6.97 \\ + 20.28 \\ \hline \end{array}$$
13.
$$\begin{array}{r} 8.5 \\ \times 5.9 \\ \hline \end{array}$$
14.
$$\begin{array}{r} 3003 \\ - 528 \\ \hline \end{array}$$
15.
$$\begin{array}{r} 42 \overline{)33432} \end{array}$$
16. $87 \times \$7.69$
17. $4\frac{1}{5} - 2\frac{1}{2}$
18. $127.87 \div 1.9$
19. $14.2 + 6.38$
20. $\frac{3}{10} \times \frac{2}{9}$
21. $510 \div 24$
22. $\$63.31 - \43.64
23. $4 \div \frac{2}{3}$
24. $1\frac{1}{3} + 3\frac{1}{6}$

Solve. Show your work.

25. Hermie scored 15 975 on a video game. Gail scored 18 040. How many more points did Gail score?
26. Mrs. Schultz bought 18 wooden boards. Each board was 1.7 m long. What was the total length of the wood she bought?
27. Lee has to cut a wire 58.9 cm long into pieces that are each 3.8 cm long. How many 3.8 cm pieces will he get?
28. Kristen spent \$18.39 for meat and \$25.75 for other groceries. She paid for them with a fifty-dollar bill. How much change did she receive?

Checking Up -- Decimals, Fractions, and RatiosUse $>$, $<$, or $=$ to complete each statement.

1. 4.16 ____ 4.061

2. $\frac{4}{5}$ ____ $\frac{5}{7}$

3. 2.103 ____ 2.3

List in order from least to greatest.

4. 10.103 , 10.13 , 10.013 , 10.1

5. $\frac{3}{4}$, $\frac{2}{3}$, $\frac{5}{8}$, $\frac{3}{5}$

Round to the

6. nearest hundredth. 4.072

7. nearest tenth. 1.485

Write each as a decimal.

8. $\frac{5}{8}$

9. $\frac{12}{5}$

Write each as a percent.

10. 0.7

11. $\frac{3}{4}$

Complete.

12. $15:20 = 3: \underline{\hspace{1cm}}$

13. $\frac{4}{9} = \frac{\hspace{1cm}}{36}$

14. $4:6 = \underline{\hspace{1cm}}:9$

15. $\frac{15}{18} = \frac{20}{\hspace{1cm}}$

Checking Up -- Measurement

Complete.

1. $70 \text{ mm} = \underline{\hspace{1cm}} \text{ cm}$

2. $4.06 \text{ L} = \underline{\hspace{1cm}} \text{ mL}$

3. $1.6 \text{ km} = \underline{\hspace{1cm}} \text{ m}$

4. $500 \text{ g} = \underline{\hspace{1cm}} \text{ kg}$

5. $2.3 \text{ m} = \underline{\hspace{1cm}} \text{ cm}$

6. $4500 \text{ mL} = \underline{\hspace{1cm}} \text{ cm}^3$

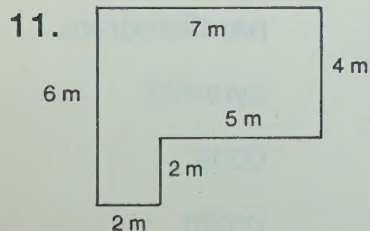
7. $\$1.14 \text{ for } 3 \text{ L} = \underline{\hspace{1cm}}/\text{L}$

8. $482 \text{ km in } 5 \text{ h} = \underline{\hspace{1cm}} \text{ km/h}$

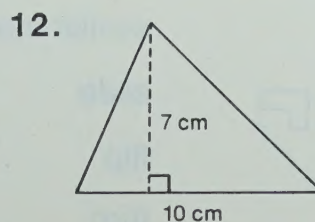
9. The mass of 3.5 L of water is $\underline{\hspace{1cm}} \text{ g}$.

10. The mass of $\underline{\hspace{1cm}} \text{ cm}^3$ of water is 3 kg .

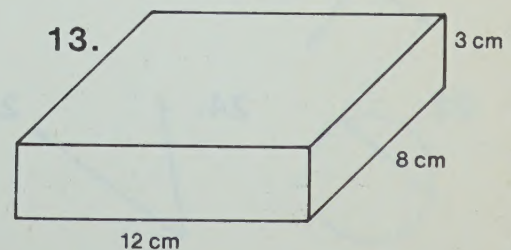
Find the perimeter.



Find the area.



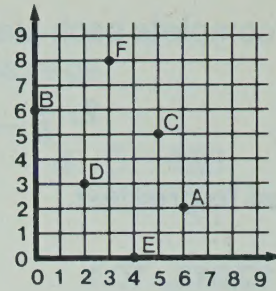
Find the volume.



Checking Up -- Graphing and Geometry

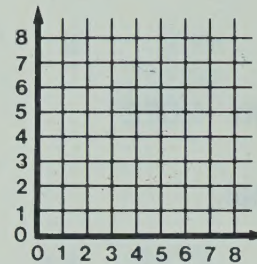
Give the ordered pair of numbers that matches

- | | |
|-------------|-------------|
| 1. point A. | 2. point B. |
| 3. point C. | 4. point D. |
| 5. point E. | 6. point F. |



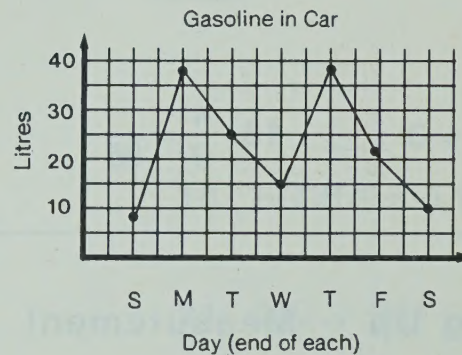
Plot each point.

- | | |
|---------------|---------------|
| 7. $G(0, 1)$ | 8. $H(7, 4)$ |
| 9. $J(1, 7)$ | 10. $K(4, 3)$ |
| 11. $L(6, 6)$ | 12. $M(7, 8)$ |



Mr. Salmon's electronic fuel gauge shows how many litres of gasoline are in the tank of his automobile. Use the graph at the right to help you answer each question.

13. When did Mr. Salmon fill the tank?
14. On which day did he drive the most?
15. On which day did he drive the least?
16. On which day did he have the least gasoline left?



From the list, choose the one word or phrase that best matches each picture.

- | | | | | |
|-----|-----|-----|---------------------|---------------------|
| 17. | 18. | 19. | acute angle | parallel lines |
| 20. | 21. | 22. | obtuse angle | perpendicular lines |
| 23. | 24. | 25. | isosceles triangle | diameter |
| | | | scalene triangle | chord |
| | | | congruent triangles | trapezoid |
| | | | similar triangles | parallelogram |
| | | | slide | pyramid |
| | | | flip | cone |
| | | | turn | prism |

QA 135-5 S79 1982 GR-6 STD-WK BK-

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STARTING POINTS IN MATHEMATICS/

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